

Analysis of Health and Sports Performance-Associated Psychological Factors of Kabaddi Players with Hearing Impairment: A Comparison with Hearing Kabaddi Players

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Abstract

Study Purpose: Participation of hearing impairment people to take part on an equal opportunity with others in sports activities and analysis of strength & body composition factors among Kabaddi players with hearing impairment was the study's goal and comparing the same with hearing Kabaddi players in Tamil Nadu. **Results:** The study's results showed that the hearing Kabaddi players group had significantly stronger mean values for hand grip strength right (27.19%) and hand grip strength left (19.48%) than the control group variables. Mean values of height of the hearing Kabaddi Players was significantly better than Kabaddi players with hearing impairment group and also the hearing Kabaddi players group had better mean values on height (1.19%) than the Kabaddi players with hearing impairment group and Kabaddi Players with hearing impairment group was with better mean values on visceral fat (39.45%) than hearing Kabaddi players group. **Conclusions:** In terms of weight and body mass index, the study's findings showed no appreciable difference between hearing and hearing-impaired Kabaddi participants. According to data analysis, there was a comparable mean difference in weight and visceral fat between the Kabaddi players with hearing impairment group and the hearing Kabaddi players group.

Keywords: Hand grip strength, Body composition variables, Kabaddi players with hearing impairment and Hearing Kabaddi players.

1. INTRODUCTION

Sports participation can help to develop the person to make fit in his physical, mental, social, and spiritual aspects. Regular exercise is one of the most important thing a person can do to improve his health. All of us, but notably people with impairments, benefits greatly from increased movement and less sitting. Depending on their age, gender, and level of hearing loss, children with hearing impairments may experience problems with everyday activities. It is observed that impaired people's physical and physiological capacities improve when they are introduced to sports (Demirel, 2018). Sports activities assist hearing-impaired youngsters develop their

speed, strength, and other motor abilities, which in turn enhances their lifestyle (Ozer, 2004). Children with disabilities who participate in athletics are better able to work together, acquire a feeling of sharing, and connect with peers who are developing normally. Additionally, it aids in the development of the neurological and muscular systems, as well as the mind and muscles (Bayram, 2003).

Gaining lean body mass helps improve strength and power. Power and strength are impacted by muscle size. Thus, as an athlete's lean body mass grows, they are prone to perform with more efforts for a given period of time. Kabaddi players need to maintain a healthy body composition. Although some athletes perform better when they are extremely little, kabaddi players must have the right amount of body mass, height, or even both. Higher mass provides kabaddi players greater inertia, allowing them to play their positions with more stability, as such the speed and agility are not compromised (Kinetic, 2017).

Muscular strength helps you maintain a healthy weight by burning calories and enhancing your body composition (the amount of muscle to fat). Increasing physical fitness can promote healthy sleep patterns and get control over mood swings. In order to do offensive pushes, falls, turns, and quick changes in direction while holding, bending, jumping, and contacting legs and hands while keeping grip and breathing, both offensive and defensive players in kabaddi must be stronger (Alkner et al., 2003 and Velu & Subramani, 2016).

2. MATERIALS AND METHODS

The study was conducted on 96 hearing and 96 hearing-impaired kabaddi players from state-level adapted sports & games and the invitational state-level kabaddi tournament-2022, all of which were hosted by Ramakrishna Mission Vivekananda Educational and Research Institute in Coimbatore, Tamil Nadu, India. In this study, the chosen volunteers ages ranged between 18 and 25 years, who took part actively in the game. The chosen factors in this study were examined using the following methodology: The CAMRY Digital Handgrip Dynamometer (200 lbs/90 kgs) which was used to measure the hand grip strength of the right and left hand. The LABART Stature Meter was used to determine height, and the OMRAN-7 Body Composition Analyzer was used to determine visceral fat and body mass index. The study's ethical conduct was authorised by the faculty of general & adapted physical education and yoga at the Ramakrishna Mission Vivekananda Educational and Research Institute in Coimbatore, Tamil Nadu, India.

2.1 Statistical techniques

This study's objective was to utilize independent-test to find the mean difference and standard deviation. Here two descriptive statistics has been used to get a sense of how a group of values is distributed. In order to determine that there was any statistically significant difference between hearing and hearing-impaired Kabaddi players, the means of the groups' variables were compared and also it was seen that whether the hearing and hearing-impaired Kabaddi players had any difference statistically from one another.

3. RESULTS

Table 1

Shows the Results of the Handgrip Strength Right and Handgrip Strength Left for Kabaddi Players with Hearing Impairment Group and Hearing Kabaddi Players Group (Mean \pm Sd)

Groups/variables	Handgrip strength right	Handgrip strength left
Kabaddi players with hearing Impairment	35.67 \pm 8.31	34.59 \pm 8.17
Hearing Kabaddi players	45.37 \pm 7.15	41.33 \pm 7.53

*Level of significance was fixed at 0.05 with df 190 table value is 1.97.

Table 1 shows that the mean value of handgrip strength right and left between Kabaddi players with hearing impairment group and hearing Kabaddi players group were 35.67–45.37 and 34.59–41.33 respectively.

The calculated “t” ratio value of 5.99 and 5.93 was greater than the 1.97 needed in the table to be considered significant at the 0.05 level of confidence. As a consequence, the findings of this study indicated that there was a substantial difference in handgrip strength on the right and left sides between the group of Kabaddi players who had hearing impairment and the hearing group (Figure 1).

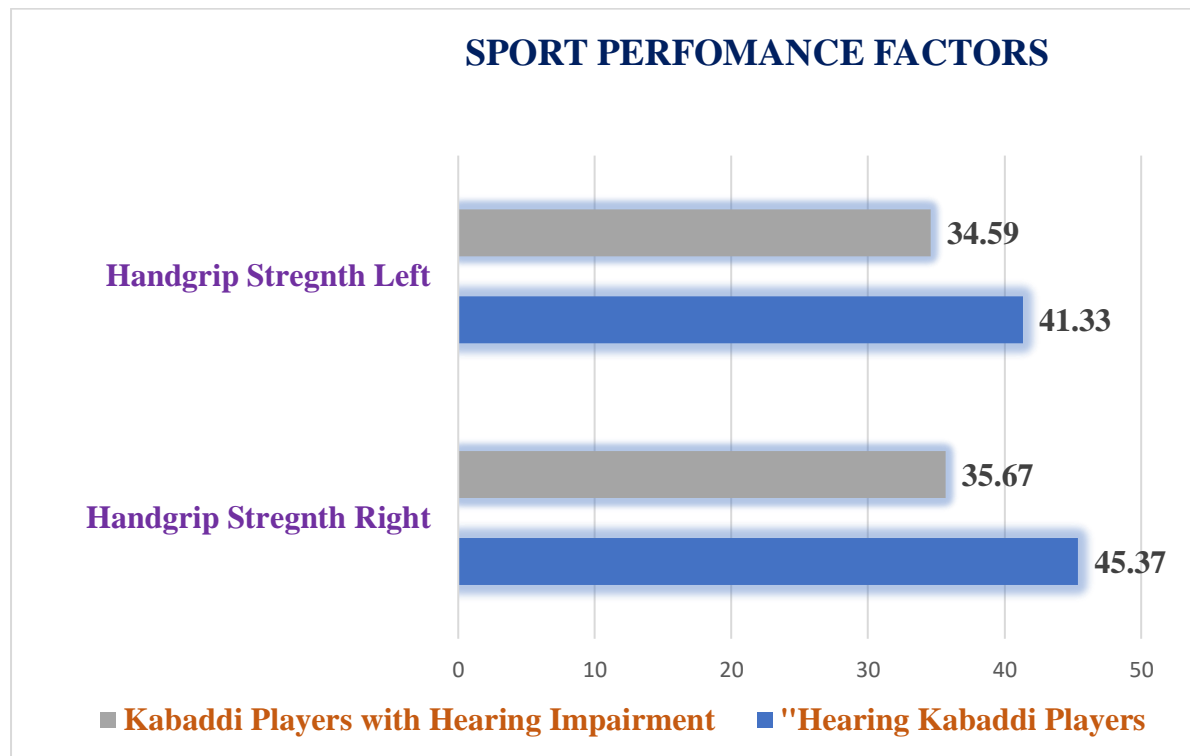


Figure 1 The Graph Showing the Mean Differences on Hand Grip Strength Right and Left among Kabaddi Players with Hearing Impairment and Hearing Kabaddi Players

Table 2

Shows the results of the Height, weight, visceral fat and BMI for Kabaddi players with hearing impairment group and hearing Kabaddi Players group (Mean \pm SD)

Groups/variables	Height	Weight	Visceral fat	BMI
Kabaddi players with Hearing Impairment	1.68 \pm 5.82	64.70 \pm 12.17	10.29 \pm 8.09	23.29 \pm 40.06
Hearing Kabaddi Players	1.70 \pm 6.21	72.94 \pm 62.60	6.23 \pm 2.92	23.00 \pm 2.64

* Level of significance was fixed at 0.05 with df 190 table value is 1.97.

Table 2 shows that the mean values of Kabaddi players with hearing impairment group and hearing Kabaddi players group height, 1.68 and 1.70, weight 64.70 and 72.94, visceral fat 10.29 and 6.23 and BMI 23.29 and 23.00 respectively.

The obtained “t” ratio values of 2.39 and 4.62 exceeded the minimum 1.97 table value for significance at the 0.05 level of confidence. As a consequence, the findings of this study indicated that there was a significant difference in height and visceral fat between the Kabaddi players with hearing impairment group and the hearing Kabaddi players group. The calculated “t” ratio values for weight and BMI, however, were lower than the necessary table value of 1.97 for significance at the 0.05 level of confidence. The values were 1.26 and 0.72, respectively. The study’s findings indicated that there was no discernible change in weight and BMI between the group of Kabaddi players with hearing impairment and the group of players who were hearing (Figure 2).

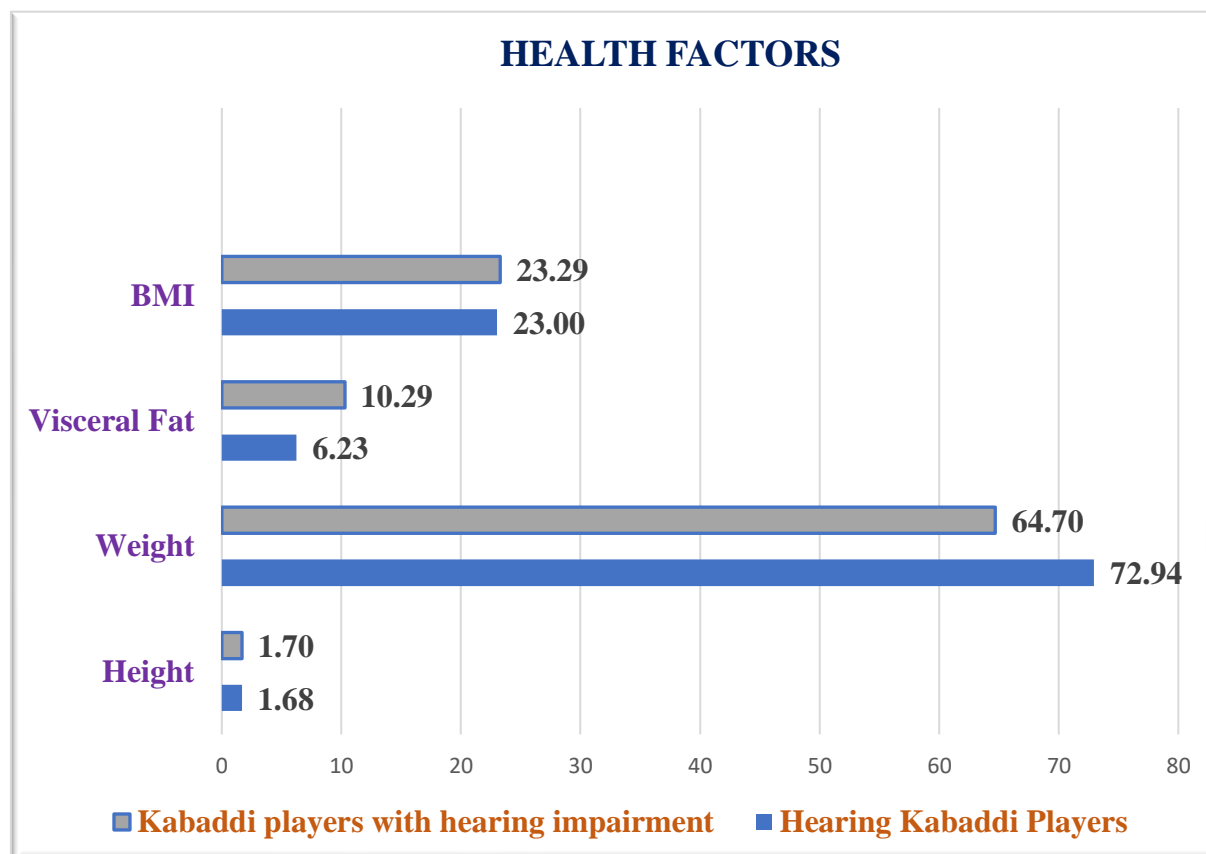


Figure 2 The Graph Showing the Mean Differences on Height, Weight, Visceral Fat and BMI Among Kabaddi Players with Hearing Impairment and Hearing Kabaddi Players

4. DISCUSSIONS

4.1 Arm strength right and left

According to the study's findings, there was a considerable distinction between Kabaddi players with hearing impairment and hearing Kabaddi players group. Hearing Kabaddi players group was better than Kabaddi players with hearing impairment group on the selected sport performance associated factors of arm strength right and arm strength left. Similar study was conducted by **Kaori et al., (2022)**. According to the study's findings, maintaining physical health is crucial for women who are experiencing hearing loss. Investigation of sex variations in the link between physical function and hearing impairment in the general population requires further research.

4.2 Height and visceral fat

According to the study's findings, there was a considerable distinction between Kabaddi players with hearing impairment and hearing Kabaddi players group on selected body composition variables of height and visceral fat. Hearing Kabaddi players group was better than Kabaddi players with hearing impairment group on height and Kabaddi players with hearing impairment group was greater than hearing kabaddi players group on visceral fat. Similar study was conducted by **Dawes et al., (2022)**. The findings showed that four research on birth weight and seven studies on adult height had been located. According to three research, lower birth weight is linked to worse adult hearing. Shorter height was linked to worse hearing in six trials. Bias risk was minimal to low. Data from four research were provided for the two-step individual patient data random-effects meta-analysis.

4.3 Weight and body mass index

The study's findings showed that there were no appreciable differences in weight and body mass index the two characteristics related with weight and sports performance, between the group of Kabaddi players who were with hearing impairment and the group of hearing Kabaddi players. Whereas, Hearing Kabaddi players group

was better than Kabaddi players with hearing impairment group on weight and Kabaddi players with hearing impairment group was greater than hearing Kabaddi players group on body mass index. In a related research by **Baseret al., (2022)** it was shown that there were more statistically significant differences between the component values of children with obesity and the control group. Hearing tests did not distinguish between obese children with or without hepatosteatosis, hyperlipidemia, or insulin resistance. According to the present study's findings, obese kids are more likely than the general population to grow up with hearing problems. For kids and teenagers with weight issues, we advise more regular audiological assessments, including speech audiometry.

5. CONCLUSIONS

Health and sports performance associated factors of Kabaddi players with hearing impairment was significantly lower than the hearing kabaddi players in the handgrip strength on right & left, height, weight, visceral fat and BMI, and also that these groups did not differ significantly from one another. The results also revealed that while comparing the selected health and sports performance associated factors between these two groups hearing Kabaddi players were better than Kabaddi players with hearing impairment.

Therefore, based on these findings, we strongly recommended that Kabaddi players with hearing impairment need to be active in sports or activity participation in their training routine. Being more active during their life span will reflect higher level of physical fitness and this should in turn be replicated by a decreasing of inactive related diseases like obesity, diabetes and cardiac problems. Given that person with hearing impairment may perform equally to hearing peoples if they are given the equal opportunities in both physical activities and sports participation.

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