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Strategies Adopted by Elite Handball Players of Haryana State to Maintain Physical Fitness in Off Season

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Introduction

Maintaining physical fitness is crucial for an elite handball player for several reasons. Handball is a high-intensity sport that requires players to maintain peak performance throughout the game, which can last for 60 minutes or more. Excellent cardiovascular endurance allows players to sustain their energy levels and recover quickly between intense bursts of activity. Moreover, physical strength is vital for both offensive and defensive plays. Strong muscles help players execute powerful shots, withstand physical contact, and maintain stability and balance during rapid movements and changes in direction. Handball involves quick sprints, sudden stops, and changes in direction. Agility and speed are essential for outmaneuvering opponents, executing fast breaks, and positioning effectively on both offense and defense. Furthermore, adequate flexibility helps prevent injuries and enhances the range of motion, which is crucial for executing various handball techniques, such as passing, shooting, and blocking.

Handball requires precise hand-eye coordination and timing. Maintaining overall physical fitness, including core strength and proprioception, helps improve coordination and fine motor skills. Thus, a well-rounded fitness program or regime that includes strength training, flexibility exercises, and conditioning helps reduce the risk of common handball injuries, such as sprains, strains, and overuse injuries. Along with physical fitness contribution of mental toughness is also very important to handle the physical demands of the game better, which in turn helps maintain focus, concentration, and a positive mindset during challenging moments. Consistent physical fitness enables players to perform at their best in every game, leading to better individual and team performance. This consistency is essential for achieving and maintaining elite status in the sport. Overall, physical fitness is a cornerstone of an elite handball player's success, affecting every aspect of their game from performance to injury prevention and mental resilience. Hence, in order to understand the strategies adopted by the elite handball players of Haryana State of India (especially during the off season) a systematic survey using standardized research instrument was carried out and the results of the same are presented here under.

2.0 Research Methodology

In the present study the elite handball players of Haryana State are the primary source of data and the same were selected purposefully. All the elite handball players of Haryana State formed the total population of the study. The study was carried out by using single group design and 100 Elite Handball Players of Haryana State were selected. In order to determine the impact of various strategies adopted by the elite handball players on their physical fitness various attributes were considered for measurement. A self-prepared questionnaire was used to determine the strategies adopted by the elite handball players of Haryana to remain physically fit. The data was collected from the subjects through a research instrument and by using survey methodology. The reliability of data was checked by establishing the subject's reliability, instrument's reliability, the tester competency and reliability of tests. In this study secondary data was collected from the general publications, scientific journals, publications of various sports organizations, research institutes and books from National and International authors and also the internet sources. The data characteristics (descriptive statistics) such as Frequency, Mode, etc. were determined. The Chi-Square test was used as an inferential statistical test. The significance level was chosen to be 0.05 (or equivalently, 5%). All the data was analyzed using SPSS 18.0 Software.

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3.0 Results of the Study

3.1 Setting realistic and achievable fitness goals and tracking progress

Table No 1: Setting realistic and achievable fitness goals and tracking progress by handball players

Response	No.	Percent
Almost always	9	9.0
Often	16	16.0
Sometimes	46	46.0
Seldom	21	21.0
Never	8	8.0
Total	**100**	**100.0**

χ^2= 47.9; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 1 shows information pertaining to setting realistic and achievable fitness goals and tracking progress by handball players of Haryana State. Study results show that 9.0% handball players always set realistic and achievable fitness goals while 16.0% players often set realistic and achievable fitness goals. In addition to it 46.0% players sometimes and 21.0% players seldom set realistic and achievable fitness goals. Furthermore 8.0% players do not set realistic and achievable fitness goals.

3.2 Regular Aerobic Exercise

Table No 2: Aerobic Exercise like running, cycling, swimming, etc. for at least 150 minutes of moderate-intensity or 75 minutes of high-intensity exercise per week done by Handball Players

Response	No.	Percent
Almost always	53	53.0
Often	28	28.0
Sometimes	15	15.0
Seldom	4	4.0
Never	0	0.0
Total	**100**	**100.0**

χ^2= 91.7; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 2 shows information pertaining to aerobic exercise done by handball players of Haryana State. Study results show that 53.0% handball players regularly do aerobic exercise while 28.0% players often do aerobic exercise. In addition to it 15.0% players sometimes do whereas 4.0% players seldom do aerobic exercise.

3.3 Strength Training

Table No 3: Strength Training, resistance training exercises such as weight lifting, bodyweight exercises, or resistance band exercises at least two days a week to build and maintain muscle mass done by Handball Players

Response	No.	Percent
Almost always	5	5.0
Often	16	16.0
Sometimes	47	47.0
Seldom	24	24.0
Never	8	8.0
Total	**100**	**100.0**

χ^2= 56.5; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 3 shows information pertaining to resistant training exercise done by handball players of Haryana State. Study results show that 5.0% handball players regularly do resistant training exercise while 16.0% players often do resistant training exercise. In addition to it 47.0% players sometimes do whereas 24.0% players seldom do resistant training exercise. Furthermore 8.0% players do not engage in resistant training exercise.

3.4 Flexibility and Stretching

Table No 4: Flexibility and Stretching includes stretching exercises or yoga at least four days a week done by Handball Players

Response	No.	Percent
Almost always	49	49.0
Often	34	34.0
Sometimes	17	17.0
Seldom	0	0.0
Never	0	0.0
Total	**100**	**100.0**

χ^2= 92.3; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 4 shows information pertaining to stretching exercise or Yoga done by handball players of Haryana State. Study results show that 49.0% handball players regularly do stretching exercise or Yoga while 34.0% players often do stretching exercise or Yoga. In addition to it 17.0% players sometimes do stretching exercise or Yoga.

3.5 Balance Exercises

Table No 5: Balance Exercise Balance Exercises involve tai chi or balance drills to improve stability and prevent falls for at least three days a week done by Handball Players

Response	No.	Percent
Almost always	6	6.0
Often	15	15.0
Sometimes	49	49.0
Seldom	21	21.0
Never	9	9.0
Total	**100**	**100.0**

χ^2= 59.2; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 5 shows information pertaining to balance exercise done by handball players of Haryana State. Study results show that 6.0% handball players regularly do balance exercise while 15.0% players often do balance exercise. In addition to it 49.0% players sometimes do while 21.0% players seldom do these exercises. Furthermore 9.0% players do not engage in such exercises.

3.6 Mixing different types of workouts

Table No 6: Mixing different types of workouts to keep things interesting and avoid monotony and to stay motivated done by handball players

Response	No.	Percent
Almost always	9	9.0
Often	14	14.0
Sometimes	22	22.0
Seldom	39	39.0
Never	16	16.0
Total	**100**	**100.0**

χ^2= 26.9; **df**: 4; χ^2_{crit}= 9.49; p<0.05

Above Table 6 shows information pertaining to different types of workout done by handball players of Haryana State. Study results show that 9.0% handball players regularly do different types of workout while 14.0% players often do different types of workout. In addition to it 22.0% players sometimes do while 39.0% players seldom do these exercises. Furthermore 16.0% players do not engage in such exercises.

4.0 Conclusions

4.1 Setting realistic and achievable fitness goals and tracking progress

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State sometimes set realistic and achievable fitness goals and track progress.

4.2 Regular Aerobic Exercise

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State always do aerobic exercises.

4.3 Strength Training

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State sometimes engage in resistant training exercise.

4.4 Flexibility and Stretching

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State always do stretching exercise or Yoga.

4.5 Balance Exercises

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State sometimes do balance exercise.

4.6 Mixing different types of workouts

- From the study results it is evident that most (p<0.05) of the handball players of Haryana State seldom do different types of workout.

5.0 References

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