

RELATIONSHIP OF SELECTED KINEMATIC VARIABLES WITH THE PERFORMANCE OF CAST TO UPPER ARM HANG ON PARALLEL BARS IN MEN'S ARTISTIC GYMNASTICS

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ABSTRACT

The purpose of this study was to investigate the relationship of selected kinematical variables with the performance of cast to upper arm hang on parallel bars in men's artistic gymnastics. A total of five ($n = 5$) best male gymnasts of 18 to 23 years old from L.N.I.P.E., Gwalior (M.P.) were selected for the present study as subjects. To acquire kinematical data, a digital Nikon D-3100 video recording camera with a frame rate of 30 frames per second, were used during the execution by placing it left side parallel and perpendicular to the sagittal plane. From the video, the photograph of selected four phases (i.e. initial swinging phase, kicking and pulling phase, flight phase and re-grasping phase) were obtained by using snipping tool software. Joint Point Method was used in order to obtain the values of selected angular kinematic variables by developing stick figure. Height of Center of Gravity was calculated by segmentation method. To determine the degree of relationship between selected kinematic variables (linear and angular) with the cast performance of gymnasts on parallel bars, Pearson's Product Moment Correlation technique was used. The level of significance was set at 0.05. The results revealed that there was a significant values of coefficient of correlation at angle at neck joint ($r = -.940$) at flight phase. Except this all selected linear and angular kinematic variables at all the phase had shown insignificant relationship ($r < .878$) with the dependant variable (cast performance). On the basis of results it is concluded that the performance of any games and sports depending upon the multidimensional factors such as physical factors, physiological factors, psychological factors and so many other factors. Only due the slight association in the selected kinematics variables, the performance of the athlete cannot vary directly.