Effects of GRF on CMJ in Different Wooden Surface Systems

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Abstract: Background and Objective: For safety and fair during basketball competition, FIBA proposes the definite level of physical functions in wooden surface system (WSS). There are existing various between different systems in indoor-stadium, so the aim of this study want to know how many effects in different WSS, especially for effects of ground reaction force(GRF) when player jumped. Materials and Methods: 12 participants acted counter-movement jump (CMJ) on 7 different surfaces, include 6 WSSs by 3 types rubber shock absorber pad (SAP) on cross or parallel fixed, and 1 rigid ground. GRFs of takeoff and landing had been recorded from an AMTI force platform when all participants acted vertical CMJs by counter-balance design. All data were analyzed using the one-way ANOVA to evaluate whether the test variable differed significantly between surfaces. The significance level was set at α =0.05. Results: There were non-significance in GRF between surfaces when participants taken off. For GRF of landing, we found WSS with cross fixed SAP are harder than parallel fixed. Although there were also non-significance when participant was landing on cross or parallel fixed surfaces, but there have test variable differed significantly between surfaces or parallel fixed to rigid ground. In the study, landing to WSS with the hardest SAP, the GRF also have test variable differed significantly to other WSS. Conclusion: Although official basketball competition is in the WSS certificated by FIBA, there are also exist the various in GRF under takeoff or landing, any player must to warm-up before game starting. Especially, there is unsafe situation when play basketball on uncertificated WSS.

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