DIFFERENCES BETWEEN HEIGHT OF VERTICAL JUMP AND HEIGHT AT THE REBOUND IN BASKETBALL

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INTRODUCTION: Half of the shots will come off a ring in a basketball game. The acquisition of a rebound becomes a factor of win in basketball game; the more rebounds a team gets, the more chances that a team shoots a ball and score points. Many past studies evaluated only a height of vertical jump. However, when playing sports, such as volleyball and basketball, timing is also an important factor whether players can spike a ball or get a rebound. So, our study focused on a jumping height and its timing in basketball players. We hypothesized that neither the height of vertical jump nor the height of rebound is corresponded. Therefore, the aim of this study was to investigate differences between the height of vertical jump and the height of rebound in basketball players.

METHODS: Six college female basketball players were participated in this study (age 20.5 ± 1.2 years, height 160.5 ± 3.5 cm, body weight 57.3 ± 7.9 kg, experience 9.5 ± 1.8 years (mean ± SD)). All subjects were healthy and had no history of injuries. All subjects signed informed consent forms for their participations. Subjects randomly performed both vertical jumps (V-condition) and rebound (R-condition); they performed 6 jumps in each. The highest position in R-condition (Peak R-condition) was taken. Three video cameras and three reflected markers set on this study. The value of the mean height was measured at 3 low back points, and Frame-DIAS 2-dimensional movement analysis system was used for analyzing data. A height of jump was average values of changes from the standing position to the peak position of jump.

RESULTS and DISCUSSION: A jumping height was significantly lower in R-condition than that of V-condition (p < 0.05). A jumping height was significantly higher in Peak R-condition than that of R-condition (p < 0.05). This implied a mess up the timing in R-condition. Earlier studies showed that increasing in the portion of the body used in the motor act or increasing the amplitude of the movement caused the positive response. In our study, the height of vertical jump compared with the height of rebound showed similar results. A jumping height was significantly lower in Peak R-condition than that of V-condition (p < 0.05). It was caused because the setup time to jump was shortened in R-condition. Thus, our results implied that a jumping height in Peak R-condition was decreased because subjects received visual information, especially the orbit of basketball.

Keywords: 3D Analysis, Jumping, Basketball