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Impact of a Virtual Reality-Training on Real-World Hockey Skill: An Intervention Trial

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Abstract : Training specificity is imperative for successful performance of the elite athlete. Virtual reality (VR) has been successfully applied to a broad range of training domains. However, to date there is little research investigating the use of VR for sport training. The purpose of this study was to address the question of whether virtual reality (VR) training can improve real world hockey shooting performance. Twenty four volunteers were recruited and randomly selected to complete the virtual training intervention or enter a control group with no training. Four primary types of data were collected: 1) participant's experience with video games and hockey, 2) participant's motivation toward video game use, 3) participants technical performance on real-world hockey, and 4) participant's technical performance in virtual hockey. One-way multivariate analysis of variance (ANOVA) indicated that that the intervention group demonstrated significantly more real-world hockey accuracy [$F(1,24) = 15.43$, $p < .01$, E.S. = 0.56] while shooting on goal than their control group counterparts [intervention M accuracy = 54.17%, SD=12.38, control M accuracy = 46.76%, SD=13.45]. One-way multivariate analysis of variance (MANOVA) repeated measures indicated significantly higher outcome scores on real-world accuracy (35.42% versus 54.17%; ES = 1.52) and velocity (51.10 mph versus 65.50 mph; ES=0.86) of hockey shooting on goal. This research supports the idea that virtual training is an effective tool for increasing real-world hockey skill.

Keywords : virtual training, hockey skills, video game, esports
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