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Acceptance by athletes of a virtual reality head-mounted display intended to enhance sport performance

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Many technological devices are being used effectively to improve sports performance (e.g., sensors, heart rate monitors, cell phone applications). However, it is not because a technology is objectively efficient that it is automatically accepted by its potential users who may refuse to use these devices even before trying them or gradually stop using them in their training. This may also be the case for immersive virtual reality (VR) devices such as head-mounted displays (VR-HMD). However, in the literature on VR in sport, this acceptance is almost taken for granted (*“Since VR-HMD is used to improve sports performance, it is bound to be accepted by athletes”*). It is therefore necessary to question acceptance from a scientific point of view. The purpose of this communication is to identify the self-reported variables that influence the approval and use of VR-HMD in athletes, based on the most widely used theoretical model, the Technology Acceptance Model. This model identifies the variables that influence the intention to use a technology (perceived usefulness, perceived ease of use, perceived enjoyment, but also subjective norms, i.e., the social influence of the environment). It was recently applied to the study of acceptance by athletes of a VR-HMD intended to enhance sport performance (Mascret et al., 2022).

A total of 1162 athletes usually involved in competitive sport (from recreational to international level) participated in this cross-sectional study. After reading a short text introducing the VR-HMD and its benefits for improving sport performance, the athletes completed a questionnaire assessing their acceptance of the VR-HMD prior to initial use. The results of the structural equation modeling analysis revealed that perceived usefulness, perceived ease of use, perceived enjoyment, and subjective norms were positive predictors of intention to use the VR-HMD. Overall, the VR-HMD is fairly well accepted by athletes to improve their sport performance, regardless of their level of competition, although recreational athletes had a mitigated opinion on its actual usefulness for them. On the other hand, athletes at all other levels felt that their environment (e.g., teammates, coaches) would not encourage them to use VR-HMD, unlike elite athletes. Finally, the results also revealed differences in acceptance between sports. Participants in some sports (e.g., swimming, gymnastics, athletics, cycling) did not find VR-HMD useful for improving their sport performance, while participants in other sports (e.g., soccer, tennis, badminton, fencing, basketball) did. Understanding the acceptance of a VR-HMD before it is first used seems crucial to identifying possible initial barriers to using this technology to improve sports performance.

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Reference

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