Abstract

Participating in para sports gives disabled people a sense of community and inclusivity, among other benefits. [1] However, opportunities for electric wheelchairs users to play sports are currently limited. Level 3 players in Powerchair Hockey are not able to maneuver the ball with their sticks, reducing their involvement in the game. “Increasing Stick Mobility for Powerchair Hockey Players with Upper Body Limitations” will impact Level 3,2,1 powerchair hockey players [2], overseeing powerchair hockey organizations and disabled non-athletes. The high-level objectives in addressing this opportunity are Accessibility, Effectiveness and Safety.

The main requirements of the solution include adaptability to different people, easy installation and removal. Level 3 players should be integrated into the game without posing disadvantages to other players while being able to execute game plays as other players. In case of damage, repair should require minimal effort on the part of the disabled user. Safety risks incurred by any equipment subparts are very important to design for in this community.

Adaptive technology has had success in other fields before. There’s a plethora of adaptive video game control options for people with many different disabilities. There are controllers[3] with interchangeable and more accessible switches/joysticks, controllers that are mouth controlled, and voice controlled game commands. This field has been incredibly successful at leveling the playing field for disabled users. Similar solutions, if implemented into power hockey, would greatly include gameplay for level 3 players.