



The Effects of Modifying the Distance of the Penalty Shot in Water Polo

by

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The aim of this study was to determine the effects of changing the distance of the penalty shot in water polo from 4 to 5 m. While a shorter distance made the penalty shot more effective, it also reduced the use of this sanction. A total of 192 matches played in the 2003 and 2007 Water Polo World Championships were recorded. The sample included 278 penalty shots in both tournaments. Notational analysis using a longitudinal correlational and descriptive design was employed to determine whether a longer distance increased the number of sanctioned penalties (81 vs 197) and caused a non-significant decrease in scoring efficiency (7.4%) with significant differences in the relationship between the area and the type of a shot, with less centre and power shots (14.8% vs 7.1%) observed and predominance of bounce shots to the right of the goal posts. The rule change prompted more penalties, produced changes in shot direction as well as the type of a shot, and yielded a decrement of 7.4% in scoring efficiency.

Key words: water polo, rules modification, penalty shot..

Introduction

Water polo first emerged in the United Kingdom at the end of the 19th century as an alternative to football during the summer months, and it was the first Olympic team sport. This young sport discipline has undergone major changes to its rules over time since the first official regulations in 1876; the changes are ongoing, with the latest amendments made by the International Amateur Swimming Federation (FINA) in 2013. These changes have led to the emergence of three very distinct stages in the game.

Scientific interest in water polo tends to focus on physiological (Kavouras et al., 2006; Platanou and Geladas, 2006; Tsekouras et al., 2005), psychological (Marlow et al., 1998; Thanopoulos, 2006), bio-mechanical (Elliot, 1988; Feltner and Nelson, 1996; Feltner and Taylor, 1997) and technical/tactical aspects (Argudo et al., 2007; Platanou, 2004; Smith, 2004). There has been a

surge in interest in the technical/tactical aspect in recent years due to its influence on performance (Argudo et al., 2008). In particular, in recent years, technical and tactical studies of this sport have been focused on team efficacy (Argudo et al., 2007, 2008; Lupo et al., 2009), tactical roles (Lozovina et al., 2004; Lupo et al., 2012a), a competition level (Lupo et al., 2010), match outcomes (Argudo et al., 2007, 2009; Lupo et al., 2011; Smith, 2004), and margin of victory (Gomez et al., 2014; Lupo et al., 2012b, 2014).

It is therefore necessary to determine how rule changes related to the distance of the penalty shot from the goal have influenced scoring efficacy and the development of the game itself.

The aim of this study was to understand the effects of changing the distance of the penalty shot in water polo. While a shorter distance made the penalty shot more effective, it reduced the

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