UNIVERSITI TEKNOLOGI MARA

REPEATED SPRINT AND DRIBBLING ABILITY AMONG MALAYSIAN UNIVERSITY SOCCER PLAYERS

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CONFIRMATION BY PANEL OF EXAMINERS

I certify that a Panel of Examiners has met on 25th February 2015 to conduct the final examination of Annisaa Binti Basar on her Master of Science thesis entitled "Repeated Sprint and Dribbling Ability among Malaysian University Soccer Players" in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiners recommends that the student be awarded the relevant degree. The Panel of examiners was as follows:

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ABSTRACT

The purpose of the present study was to determine the relationships between repeated sprints ability (RSA) and repeated dribbling ability (RDA) with aerobic power, leg power and blood lactate. Fifty two, well-trained soccer players (age: 21.73 ± 1.82years, height: 171.31 ± 5.27cm, weight: 63.78 ± 7.30kg, BMI: 21.69 ± 2.29kg.m^{-1}) participated in this study were enrolled university students. All were members of top three teams (UiTM, UM, UKM) from the first division of Malaysian Higher Education Institution soccer league, 2013. Participants performed all four tests: 20Multistages Shuttle Run Test, vertical jump, RSA, RDA and blood lactate concentration. The VO_{2max} was measured by 20MST, while leg power was measured by vertical jump. The RSA and RDA performance indices measured were total time (TT), fastest time (FT), mean time (MT) and performance decrement (PD). Both tests involved sprinting or dribbling 7 x 34.2 m with 25 seconds rest intervals (Bangsbo, 1994). Blood sample were collected from fingertip at the end of RSA and RDA tests (zero time recovery), and at 1, 3, 5, 7, 9, and 12 minutes of recovery. Significant differences were found in peak blood lactate and lactate removal rate for RSA and RDA ($p < .05$). Low negative correlations were found among total time, mean time and VO_{2max} in RSA. While, moderate negative correlations were found among total time, fastest time and VO_{2max} in RDA. Significant positive correlations were found between performance indices (total time, fastest time, mean time) and lactate removal rate in RSA. As conclusion, the study suggests that VO_{2max} is correlated with selected RSA and RDA performance indices.

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CHAPTER ONE
INTRODUCTION

1.1   BACKGROUND OF STUDY

Soccer is an intermittent sport whereby high intensity running interspersed with rest or submaximal work performed over long duration (90 minutes) (Alexander & Mier, 2011; Bishop & Edge, 2006; Bloomfield, Polman & O'Donoghue 2007; Sirotic & Coutts, 2007). Intermittent sports correlated with three main factors which are maximal oxygen consumption, anaerobic threshold and efficiency in the oxygen cost to generate high running speed (Michael, Joyner, & Edward, 2008). Due to the nature of the game, it can be characterized as aerobic sport performed close to anaerobic threshold (Bangsbo, Mohr, & Krustrup, 2006; Sirotic et al., 2007). Intermittent activities such as repeated sprint ability influenced both energy systems (Krustrup, Mohr, Steenberg, Bencke, Kjaer & Bangsbo, 2006; Spencer, Bishop, Dawson, & Goodman, 2005).

As mentioned earlier, soccer is a team sport which relies on high aerobic energy system (Bangsbo et al., 2006; Esposito, Impellizzeri, Margonato, Vanni, Pizzini, & Veicsteinas, 2004; Stolen, Chamari, Castagna, & Wislofff, 2005). It is largely represented by 42% walking, 20% standing, 16% jogging and 17% running, 1% sprinting and 4% other activities (Mohr, Krustrup, & Bangsbo, 2003). It also requires long distance running, which covers approximately 10,000 to 14,000 meters (Da Silva, Bloomfield & Marins, 2008) in 90 minutes game and almost 90% of energy expenditure is obtained by aerobic system (Bangsbo, 1994). High level of aerobic capacity indicates good cardiovascular endurance and fitness. It has been suggested that high VO_{2max} is required in enhancing anaerobic performance especially during intermittent activities as in repeated sprint ability (Bishop, Girard & Villanueva, 2011; Meckel, Machnai & Eliakim 2009).

Previous studies reported professional soccer players VO_{2max} could reach between 55 ml.kg.min^{-1} to 67 ml.kg.min^{-1} (Abrantes, Macas & Sampaio, 2004; Reilly, Bangsbo & Franks, 2000) equates between 12 to 15 in 20 meters Multistage Shuttle Run Test (MST) (Aziz, Tan & Teh, 2005). Aerobic capacity is also important in