**Effects of Kinesio Taping on Female Athletes’ Perceived Discomfort, Pain and Daily Activity during Menstruation**

Lee, Sung-Ki · Park, Sung-Hwan · *Kim, Myung-Ki (Korea Univ)

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**I. INTRODUCTION**

Female menstruation is a regularly occurring shedding of the uterine lining – which thickens each month in preparation for receiving the egg – and the resulting bleeding from the uterus through the vagina (Oster & Thornton, 2011). This cyclical event marks a critical transformation in women’s physical, physiological, and emotional development as well as reproductive functioning (Motiff et al. 1992 & Klimek et al. 2003; Bobel & Kissling, 2011). Approximately 20~95% of all menstruating women reportedly suffer during their periods due to the discomfort and inconvenience. At least 30~50% of the population also suffer from mild to moderate pain, with 10~20% experiencing pain so severe that they cannot carry on with their normal daily activities (Woods, Moss & Dery, 1972; Andersch & Milsom, 1982).

With female athletes with particularly heavy physical engagement, their self-expectancies, cultural restriction, and menstrual symptoms were found to contribute to poor or diminished performance as well as more frequent injuries (Brooks-Gunn, Gargiulo & Warren, 1986). Such discomfort and pain as perceived by athletes also play a primary role in their missing training and/or games or competitions. Such in turn contributes to their more frequent visits to the doctor or to their dependence on drugs such as pain medication; thus causing not only decreased performance but serious adverse effects as well (Woods, 1985; Moller & Hammar, 1989).

Lately, alternative approaches using safer, non-drug initiatives have been applied to treat menstrual pain and improve pain management among female athletes. These include thermal therapy, aromatherapy, massage, and yoga. Note, however, that the continued implementation of these therapies poses a challenge due to the hectic training regimen and performance schedule as required of the athletes (Jarvis, D., Leynaert, B, 2008; Sakurai, et al 2011). On the other hand, Kinesio taping ensures minimum restrictions in time and space and allows practically anyone and
everyone to learn and apply it easily by them (Go, 1999; Lee, 2008). The taping entails the logistically sensitive application of elastic tapes that has no medication substance onto a number of parts on the body to help attenuate the internal conditions as well as musculoskeletal symptoms (Shelton, 1992; Balint & Szebenyi, 1997; Hunter & Felson, 2004) and to promote natural healing. Simply applying the tapes (one of the many natural therapies) helps contract muscles where needed and improve circulation, thereby helping achieve balance in the muscular system, improving on the negative conditions, and relaxing both mind and body (Kase, Tatsuyuki & Tomoko, 1996; Martin, 2003). The application also aims at fine-tuning the electromagnetic energy that connects and flows between the skin, muscles, and internal organs. With such better flow in place, the neuromuscular spindles located near the muscle end in the skin undergo muscle tone regulation via gamma reflex loop and short muscle contractions, thereby creating the desired therapeutic effects.

This study aimed at investigating taping, the application- and user-friendlier and more time- and space-accommodating treatment method, to identify female athletes’ perceived discomfort and pain while training or performing during menstruation and to verify its applicability as a viable intervention regimen.

II. RESEARCH METHOD

1. Subject

Subjects of this study were recruited from among female athletes attending junior high and high schools in Cheongju, Republic of Korea, and scoring Level 5 or higher on the VAS test for menstrual pain. A total of 16 participants who had also tested negative in the preliminary taping implementation and demonstrated that their sensory, motor, and cognitive functions were fully intact were selected.

2. Taping Method

An “I”-shaped segment of tapes was applied horizontally on a subject’s lower abdomen, about midway between the navel and pubis, which is where the uterus is presumably located. Afterward, a similarly shaped and portioned tape segment was applied onto the same part, this time vertically. Furthermore, each subject was instructed to stand and bend her torso forward. In that position, tapes were applied horizontally to connect her sacro-iliac joint, a pair of dents felt on each side of her lower abdomen, Tapes were also applied onto the subject’s erector spinae on both sides of the back, stretching from the sacrum up to the scapula (T6 ~ T7) <Figure 1>.