Epidemiology of Badminton Related Injuries and Effects of Static and Dynamic Stretching Exercises on Injury Prevention and Performance among Junior Badminton Players in Kandy District – Sri Lanka

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In Sri Lanka, Badminton is one of the most popular and widely played sports by school children. The first part of this study aimed to investigate the epidemiology of badminton related injuries among elite junior badminton players of Kandy district, Sri Lanka. Stretching exercises are assumed to be an integral component of physical fitness and conditioning program in order to promote wellness. Therefore, as the second part of the study, a static and dynamic stretching exercise program was introduced to the players to investigate the effects of two types of stretching exercises on injury prevention and performance. A prospective longitudinal study was conducted. Data were collected from all male and female junior badminton players of Kandy district, Sri Lanka, who compete under category "A" schools in national level tournaments. 222 badminton players were included in the epidemiological study. Among them, 150 players (67.56%) were males and 72 players were females. An overall injury prevalence of 14.00% was recorded. Injury prevalence among males and females were 7.33% and 27.77% corrspondingly. Most of the injuries among males were upper arm injuries (27.3%) and most of the injuries among females were ankle injuries (35%). It showed that there is an association between warm up duration ($p = 0.009$), cool down duration ($p = 0.000$) and injury prevalence. Two sample t-test shows that the injury incidence of females is higher than males ($p=0.005$). Pre-interventional data were collected from 69 players Post-intervention data were collected from 39 junior badminton players and the drop-out rate was 42%. After 6 months of stretching intervention injury percentage of dynamic stretching group was reduced from 42.11% to 5.26% while it was reduced from 35% to 20% in static stretching group. After 6 months period of stretching interventions, dynamic stretching can improve agility and static stretching can improve EMG activity of biceps and hamstring muscles in players. Pre-participation stretching exercises (static or dynamic) can reduce the risk of injuries.

Keywords: Badminton, Elite players, Epidemiology, Static stretching, Dynamic
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