THE EFFECTIVITY OF COLD-WATER IMMERSION AT 15℃ AND 25℃ TOWARD DURABILITY IMPROVEMENT AND LEG MUSCLE PAIN PERCEPTION IN EARLY-AGE FOOTBALL PLAYERS

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ABSTRACT

Accumulated matches with a short recovery period cause fatigue, muscle damage, and inflammation, which can decrease muscle endurance and increase the risk of injury. Cold therapy can prevent extensive tissue damage when an acute injury happens. This study aimed to determine the effectiveness of Cold-Water Immersion (CWI) at 15℃ and 25℃ on endurance and the perception of leg muscle pain in early-age football players.

This study applied a quasi-experimental design with the Two Group Pre-test-Post-test pattern. To collect the data, the researcher used pain and leg muscle endurance tests and measurements on 14 football athletes from the KKK Klajuaran Football School aged 9-11. The subjects were selected through the sampling technique and then divided into two groups: CWI 15℃ (G15) and 25℃ (G25) CWI treatment. The pre-test and post-test data on both treatments were tested using the Mann Whitney test. Each group's muscle endurance and perception of pain before and after treatment was analysed descriptively and tested using the Wilcoxon Signed Rank Test. The effectiveness test was calculated by comparing the post-test and pre-test data to the pre-test data.

The research result concluded no difference in muscle endurance and pain perception before and after treatment between the two treatment groups. In the G15 group, the pain perception decreased by 55% with the Wilcoxon test and p-value = 0.018. However, there was no change in muscle endurance found after treatment. The G25 group showed the same results where the pain perception decreased by 58% with the Wilcoxon test and p-value = 0.018, and there were also no changes in leg muscle endurance. Therefore, it can be concluded that the 15℃ and 25℃ CWI treatments can reduce pain but do not affect muscle endurance. There was also no difference in the effectiveness of the two types of treatment in reducing pain perception and increasing muscle endurance.

Keywords: cold-water immersion, pain perception, muscle durability