Introduction

Cup stacking (i.e., Speed Stacks) is a relatively new sport that has been highly promoted at many of the state, regional, and national conventions for physical educators. Cup stacking involves upstacking and downstacking 12 cups in a predefined pattern. Speed Stacks makes several claims about the benefits of participating in the event. One of the claims of Speed Stacks is that participants are “…using both sides of their bodies and brains to develop skills…” (Speed Stacks, Inc., 2004). These claims are based on other brain research, but empirical evidence with the task of cup stacking is lacking.

Purpose of the Study

The purpose of this study was to empirically examine the electrical activity of the two hemispheres of the brain, as measured by electroencephalogram (EEG), while cup stacking.

Method

Participants

Participants were volunteers (N = 18) recruited from undergraduate Exercise and Sport Sciences classes at Texas Tech University. All participants were right-handed.

Task

The participants were taught the Speed Stacks cycle. The cycle starts with the cups in stacks of 3 – 6 -3 and the hands on the timing mat. When the participants were ready, they would upstack the cups into pyramids of 3 – 6 –3, and downstack the cups into two stacks of six each. Then the participants would upstack the cups into pyramids of 6 – 6, followed by downstacking into one stack of twelve. The participants would place one cup to the left of the stack and one to the right (one cup right-side up and one upside-down). Then they would upstack the remaining cups into a pyramid of 10, followed by downstacking the cups into the original stacks of 3 – 6 –3 and returning the hands to the starting position on the timing mat.

Results and Discussion

The dependent variable was a global hemispheric measure obtained by calculating the mean of the frontal, central, temporal, and parietal lobes for each hemisphere. Means of the global hemispheric measures for the five trials for each condition (i.e., the four tasks and the baseline) were calculated. Data were analyzed using a 5 X 2 (Condition X Hemisphere) repeated measure ANOVA. The results indicated a significant main effect for condition, $F(4, 68) = 5.171, p < .05$, (see Figure 3), and interaction, $F(4, 68) = 7.736, p < .05$, (see Figure 4).

References