HANDEDNESS ASYMMETRIES AND MANUAL DEXTERITY PERFORMANCES BETWEEN RIGHT AND LEFT-HANDEDNESS CHILDREN

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Hand preference (HP) towards wright or left has been widely discussed by a broad range of scientific areas. Some investigators (e.g. Takeda, Shimada, Sato, Ogano, & Kato, 2010) affirm that there are behavioral and neurologic evidences that sustain the idea that hand preference influences specific hand motor performances and its asymmetries appear to be more evident on right-handedness (e.g. Rousson, Gasser, Caflisch, & Jenni, 2009).

The present study focused on analyzing Handedness asymmetries between right and left-handedness manual dexterity performances in children.

198 children (106 boys and 92 girls) were tested from Leiria basic schools. Ages ranged between 5 to 10 years old. Children's HP was assessed by confirming which hand was preferred/used for writing tasks. Turning and placing test (TPT) from Minnesota Manual Dexterity protocol was used to assess hand dexterity performance.

No significantly statistical differences were found between HP performances in the TPT (right-handedness mean values=100,0s ±28,0 and left-handedness mean values=104,4s ±20,9, p>0,05). Contralateral performance assessment was made comparing time spent between groups on the 1st and 3rd TPT rows put together and the same for the 2nd and 4th TPT rows put together. No significantly statistical differences were found between right-handedness and left-handedness (p>0,05) for any of the two merged variables. Another variable was computed in order to assess bilateral hand asymmetry (positive difference between the 1st and 3rd TPT rows put together and the 2nd and 4th rows put together), and it was found a significantly statistical correlation with TPT performance time (r=0,42, p=0,000). There were no significantly statistical differences found between sexes for all variables mentioned before. HP towards right or left had no influence on the TPT time performance. Lower levels of bilateral hand asymmetry seems to be associated with a better TPT time performance (less time spent).

Keywords: Minnesota Dexterity Test; Motor Coordination; Hand coordination; Motor Skills