The goal of competitive swimming is to travel the event distance as fast as possible. The identification of the parameters that predict swimming performance is one of the main aims of the swimming "science" community. Indeed, it is common sense that biomechanical and energetic variables are determinant for endurance performance (Barbosa et al., in press). Added to this, there are also anthropometric and hydrodynamic variables that are often reported as being related to swimming performance. Indeed, several research groups dedicate their attention to the relationships established between all these domain and performance variables, among themselves.

In this context, the aim of this research was to develop a theoretical model designed for swimming assessment. The theoretical model was developed according to main review papers (Grecco et al., 2005; Jurimae et al., in press) and personal observations. Several procedures were in accordance to the Declaration of Helsinki in respect to human research. The approach considered the swimming velocity, stroke frequency, distance per stroke and vertical buoyancy, as well as anthropometric and body fluid distribution parameters. As a result, the model was based on the relationships established between these domains and performance variables, and between all these domains and performance variables, among themselves. Even so, on regular basis, age-group swimmers, however, several parameters often assessed in adult swimmers are not able to be used in age-groups due to severe reasons. Even so, on regular basis, age-group coaches also do biomechanics, anthropometric and hydrodynamic assessments but with less expensive, invasive or complex procedures. Moreover, the understanding of the relationships established between these domains in age-group swimming is not fully understood (e.g. Jurimae et al., 2007). Normally, these variables interrelate among themselves. The aim of this research was to develop a path-flow analysis model of age-group swimmer’s performance based on anthropometric, hydrodynamic and biomechanical parameters. The theoretical model was developed according to main review papers about these relationships (e.g. Louw and Montpetit, 1988; Barbosa et al., in press) and age-group coaches’ assessments. The theoretical model designed is presented in figure 1.

**CONCLUSION**

As a conclusion, the model, based on anthropometric, hydrodynamic and biomechanical variables, according to the relationships suggested was not appropriated to explain performance in age-group swimmers. New studies should focus in these phenomenon to clear out data reported here. The model should include other variables (mainly hydrodynamic ones) in order to increase the prediction level.
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Resultados e Discussão

RESULTAS
AND
DISCUSSÃO

CONCLUSÕES

Referências

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