Clinical Force Production of Some Widely Used Aquatic Equipment

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1 Introduction

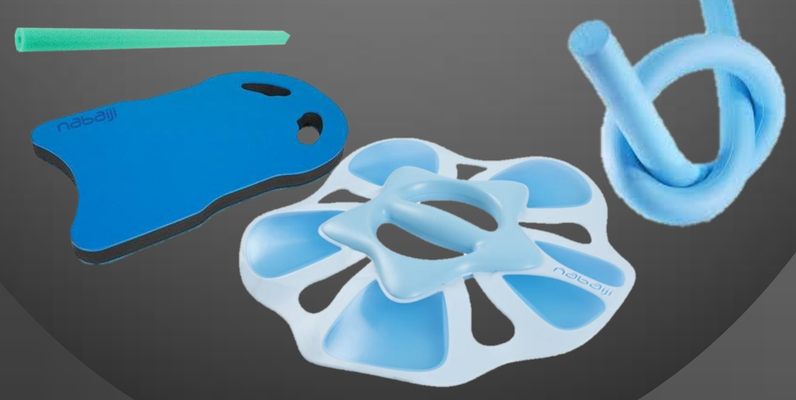
Water exercises are safely used for both therapeutic and fitness purposes. It was well defined that water is unique environment for cardiovascular and muscle strengthening. Resistance is one of the most important parameters of strengthening exercises. Different equipment is widely used in water exercise to create resistance without knowing the force production with immersion and/or drag force. The aim of this study was to quantify the resistance offered by aquatic equipment (pool noodle, Nabaiji® pullpush blue, and Nabaiji® kickboard) widely used for strengthening exercises.

2 Methods

Calculations were conducted in a swimming pool with 1.20 m depth and 33^0 C temperature of tap water.

- A regular pool noodle was fully immersed into water in four conditions;
  - (a) full length (116 x 3,22x ∏ cm3),
  - (b) half length (58x 3,22x ∏ cm3),
  - (c) quarter length (29 x 3,22x ∏ cm3) and
  - (d) full length knotted.
- Nabaiji® Kickboard 43x27x3 cm3 was fully immersed.
- Nabaji ® pullpush blue (∏ 182cm2) was drag under the water 1m/sec.

A water proof steelyard attached to the middle of the devices to pull downward/drag which measures the amount of force in kilograms needed to immerse/drag the equipment



3 Results

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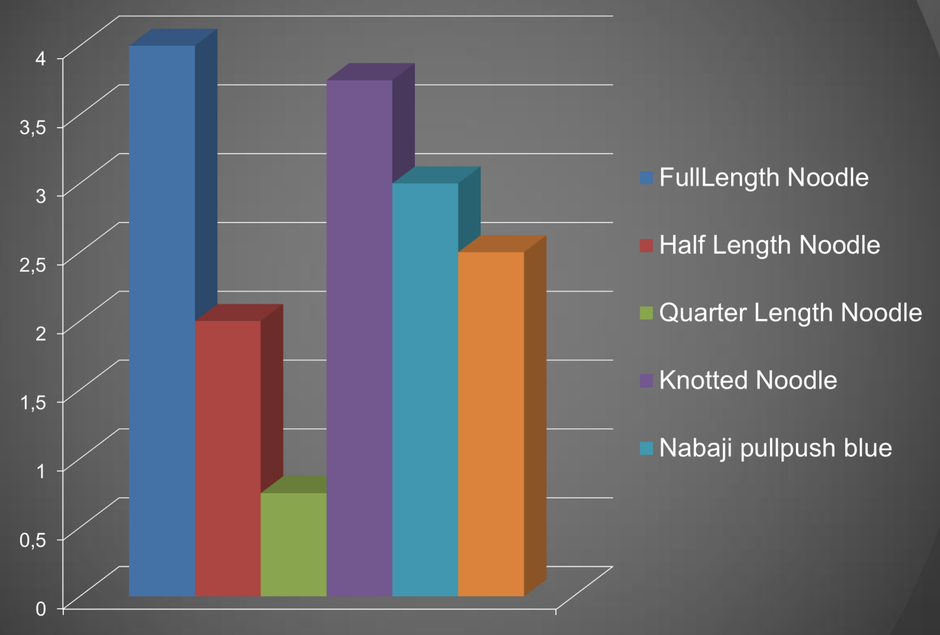

4 Conclusion

Strengthening exercises are important aspect of therapeutic and fitness training to which water provides several health benefits. Pool noodles, kick boards and drag resistive devices are commonly use for the resistance in aquatic strengthening exercises. It is very important to know the load of the movement to adjust the intensity of the exercise. This study provides some information about the clinical force production of some widely used aquatic equipment.

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