

應用工具條件制約行幼童拉唇訓練之影響

Effect of Lip Training of Preschool Children Using Operant Conditioning

中文摘要

於兒童生長發育時期，肌功能治療常藉由肌肉訓練來改善不協調的肌肉功能或矯治兒童齒列不整的問題，但學齡前兒童往往不了解訓練的重要而無法配合，使治療效果不佳。本研究結合工具條件制約與拉唇訓練，除調查學齡前兒童唇肌拉力的強度並比較拉唇訓練前後的差異，期能藉由獎勵模式增強學齡前兒童參與訓練的動機，測量拉唇訓練對強化唇肌拉力的影響程度。本研究共有 277 位學齡前幼童參與，其中實驗組 147 位，對照組 130 位。將所有幼童之初始唇肌拉力記錄後，實驗組幼童開始拉唇訓練，對照組則否。經三個月拉唇訓練後，實驗組及部份對照組幼童接受第二次唇肌拉力測量並加以記錄。實驗組幼童於第二次唇肌拉力測量後開始加入工具條件制約於拉唇訓練，再經三個月後所有幼童再做一次唇肌拉力測量並記錄。本研究發現所有參與研究之幼童第一次唇肌拉力測量值與幼童之身高、年齡有相關性，因此推測唇肌拉力強度可能與身體肌肉發育成熟度有關。實驗組與對照組第二次唇肌拉力測量值分別為 448 ± 222 公克及 358 ± 172 公克，兩者之間差異有統計上的意義 ($p < 0.05$)；實驗組與對照組第三次唇肌拉力測量值分別為 539 ± 252 公克及 290 ± 162 公克，兩者之間差異有統計上的意義 ($p < 0.01$)，由此可見拉唇訓練可增強唇肌拉力。在實驗組幼童無論以性別分別或年齡分別，三次唇肌拉力測量值兩兩相比皆有統計上的差異 ($p < 0.01$)，由此可推論，唇肌拉力隨著訓練時間增長而增加，應用工具條件制約可加強幼童唇肌拉力測量值，尤其是女童，可能因本研究所用之增強物對女童較有增強效果。

英文摘要

During growth and development, myofunctional therapy via muscle training has been used to improve muscle dysfunction or to correct malalignment of dentition during early childhood. Preschool children usually do not understand the importance of training and result in uncooperativeness, which make treatment result unpredictable. The purpose of this study is to: (1) measuring the lip strength of preschool children; (2) evaluate the effect of lip training on changing of lip strength and (3) evaluate the effect of operant conditioning on lip training program. In addition to record the lip strength of preschool children, the differences of lip strength after lip training were also surveyed. Positive reinforcement was used to increase the motivation of preschool children to attend the training, therefore the increase of lip strength was expected. There were 277 preschool children attended this study, 147 of them were in the study group, 130 were in the control group. The

lip training program started in the study group children after baseline lip strength was recorded. After 3 months, lip strength was recorded again from all of the children in the study group and part of the control group, meanwhile the operant condition was combined into the study group at this stage. Another 3 months later, lip strength recorded again on all the children. It has been found in this study that lip strength baseline data were correlated with the height and age; this could be related to the maturation of muscle. At the second stage, the mean of lip strength of the study and control group were $448 \pm 222\text{g}$ and $358 \pm 172\text{g}$, the difference between them was statistically significant ($p < 0.05$). At the third stage, the mean of lip strength of the study and control groups were $539 \pm 252\text{g}$ and $290 \pm 162\text{g}$, the difference between them was statistically significant ($p < 0.01$). Which demonstrated that lip training could increase lip strength. In the study group, there were significant differences of lip strength among three measuring stages respecting upon age and sex factor. It implied that lip strength increased with the training duration. The operant condition can improve the effect of the training on the lip strength, especially in the girls, probably due to the reinforcer used in this study were more effective for the girls than the boys.