Psychomotor Skills Training
And Table Trainer Ratios

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Psychomotor Skills Training

• Psychomotor skills involve complex perceptual discrimination and motor tasks performed in response to visual, auditory, and palpatory stimuli.
• Skills show cumulative learning and performance improves with practice.
• Osteopathic manipulative treatment is unique to the osteopathic profession.
Psychomotor Skills Training

- **Guidance Hypothesis**

  Learning theory that states that varying the amount of instructor feedback affects the learning of psychomotor skills
Psychomotor Skills Training

**Guidance Hypothesis**

- Frequent instructor feedback results in
  - Better initial skill performance
  - Inferior skill retention
- Intermittent instructor feedback results
  - Inferior initial skills acquisition
  - Better skill retention
GUIDANCE HYPOTHESIS WITH VERBAL FEEDBACK IN LEARNING A PALPATION SKILL

- Pringle 2004 *JMPT*
- 35 first-year chiropractic students were taught a motion testing technique
- **Constant** instructor feedback resulted in the **most accurate initial acquisition** of the manual skill
- **Intermittent** feedback resulted in the **best retention and learning**
- Groups of students that received feedback only **once** during each training session demonstrated the **lowest initial skills acquisition** and **lowest skill retention**.
Table Trainer Ratio

Table trainer: student ratio

Refers to number of students a single table trainer can adequately supervise

- Safety
- Sufficient individual feedback
• **Educational research**
  • Suture training - Dubrowski and MacRae 2006
  • Medical students randomized into three groups with a different instructor-to-student ratio (1:2, 1:4, 1:12)
  • All groups received initial demonstration of suturing technique by a general surgeon, and an initial skills pre-test after the presentation.
  • 1 week later, the students received 1 hour of small group instruction with fourth-year surgical residents instructors, followed by skills assessment.
  • 1 week later, skills retention assessment was given
Research Opportunity

• **Suture training research**
  • Pre-test all: students equal
  • Initial Skills Assessment: 1:2 and 1:4 groups more proficient than 1:12 group after small group session.
  • Retention Assessment: Some decline in skills among all groups but 1:2 and 1:4 groups maintained a higher level of skill than the group with the 1:12 ratio.
  • No significant differences between 1:2 and 1:4 groups
Table Trainer Ratios

• No research yet performed to determine optimum table trainer: student ratio for OMM
• Reviewed literature for other medically related psychomotor skills training research
• Reviewed medical skills training courses for required or published ratios
  • Medical skills training courses typically have published instructor to student ratios.
  • Ratio refers to the number of students a single instructor will supervise as the students learn their skills
Table Trainer Ratios

• **Medical Education Literature**

• **Government Regulation**

• **National Associations**
  • Ex. Canadian Athletic Therapists Association program accreditation manual **1:8**

• **Manual Medicine Skills Curriculum**
  • Ex. Alexander Technique Center of New England: an open letter to the National Institutes of Health **1:5**
  • Ex. The Cranial Academy: introduction to osteopathy in the cranial field **1:4**
Table Trainer Ratios

**CMS** supervising residents performing procedures during key or critical components **1:1**

Nurse anesthetist training **1:1 or 1:2**

Fetal ultrasound training **1:1**
Table Trainer Ratio

- ECOP Recommends 1:8 ratio in general
- Understand that some OMT requires a higher ratio
  - Cervical HVLA
  - Cranial
  - Trigger point injections
Table Trainer Ratio

• Improve ratio by
  • Increasing total number of table trainers
  • Splitting class
  • Decreasing total number of techniques to increase time for 1:1 interaction
Recommendation Summary

Table Trainer Ratio

• ECOP Recommendation-OMM skills laboratories should have a ratio of 1 table trainer to 8 students

• The teaching of OMM skills having greater complexity requires a higher table trainer-to-student ratio so that each student receives individual attention.