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The effects of a defecation posture, supported by upper limbs, on respiratory function. Tashiro D, Nakahara M, Kitajama E et al. J Phys Ther Sci 2020;32:332-336.

#### Introduction:

- Defecation is an important ADL that is difficult for many elderly people (and those with significant other health issues)
- People with significant health issues are also prone to constipation due to decreased physical activity and food intake
  - Constipation leads to poor bowel habits including straining strenuously, breath holding and sitting on the toilet for a prolonged period of time
- In people who also have respiratory impairments, further limitations to defecation are noted
  - Dyspnea due to increased abdominal pressure from straining
  - Fatigue from maintaining a sitting position for a long duration
- The forward leaning position when sitting on the toilet decreases the anorectal angle to increase the defecation volume
  - This position can induce dyspnea and fatigue, however, due to increased kyphosis and respiratory workload

#### Purpose:

- The purpose of this study is to compare the respiratory function between the typical defecation postures and an arm-supported posture to decrease the physical burden in patients with significant health issues

#### Methods:

- 73 healthy adults
- Compared 3 sitting defecation postures
  - Upright position
    - Hands on thighs
  - Forward leaning position
    - Forward tilt with forearms and elbows resting on thighs
  - Arm-supported forward leaning position
    - Elbows resting on top of a posture-assisting handrail
- Respiratory function was measured with a spirometer

#### Results:

- The arm-supported forward-leaning position had significantly greater vital capacity than the other positions
  - Subjectively, the arm-supported forward-leaning position was most comfortable

#### Conclusion:

- The arm-supported forward-leaning position for defecation was a subjectively comfortable position that increased vital capacity by removing the weight of the shoulder girdle and preventing excessive forward leaning.
- There was a higher maximal expiratory pressure in this position which can suggest more straining
- Limitations:
  - This study did not investigate elderly people and patients with respiratory illness who are physically burdened

#### Discussion:

- What are alternative postures for complex medical patients to improve defecation?

#### Discussion questions:

- Other research:
  - Proc Inst Mech Eng H. 2019 Apr
    - Review of devices that help elderly attain a semi-squatting position to help with defecation
  - Tech Coloproctol 2016 Feb;20(2):117-21
    - "The Thinker" position seems to be a more efficient method for defecation than the sitting position. This technique may be helpful when retraining patients with constipation.