BASELINE QUALITY OF SPIROMETRY IN THE PRIMARY CARE SETTING

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Outline

1. Introduction
2. Methods
3. Results
4. Discussion

Source: World Health Organization

Introduction – Chronic Respiratory Disease

- Asthma
  - No known prevention or cure
  - Responsive to good management and self-care

- Chronic Obstructive Pulmonary Disease (COPD)
  - Causes = Smoking, exposure to fumes, dusty places
  - Can be treated; cannot be cured
  - Early detection = better treatment results

Introduction
Primary Care Clinical Guidelines

☐ Asthma

1. Clinical history (symptom severity and frequency)
2. Spirometry

☐ COPD

1. Suspected cases should be confirmed by spirometry

Introduction – Clinical Guidelines

Spiro-what?

- Objective assessment of lung function
    - Improves diagnosis and monitoring
    - Reimbursable
    - HEDIS requirement (COPD)
    - Technique dependent

Source: World Health Organization

Source: ndd

Introduction – Motivation & Purpose

- Gap between guidelines & care received
  - Non-routine use of spirometry in primary care
  - When used, often without prior training

- To close gap…
  - Appropriate training is necessary for physicians and their staff to learn how to perform and interpret the technique correctly.

Methods – Specific Aims

1. Describe baseline quality of spirometry testing sessions in primary care.

2. Examine whether certain <u>coach & practice characteristics</u> are associated with producing interpretable, clinically useful spirometry tests.

Methods – Empirical Model
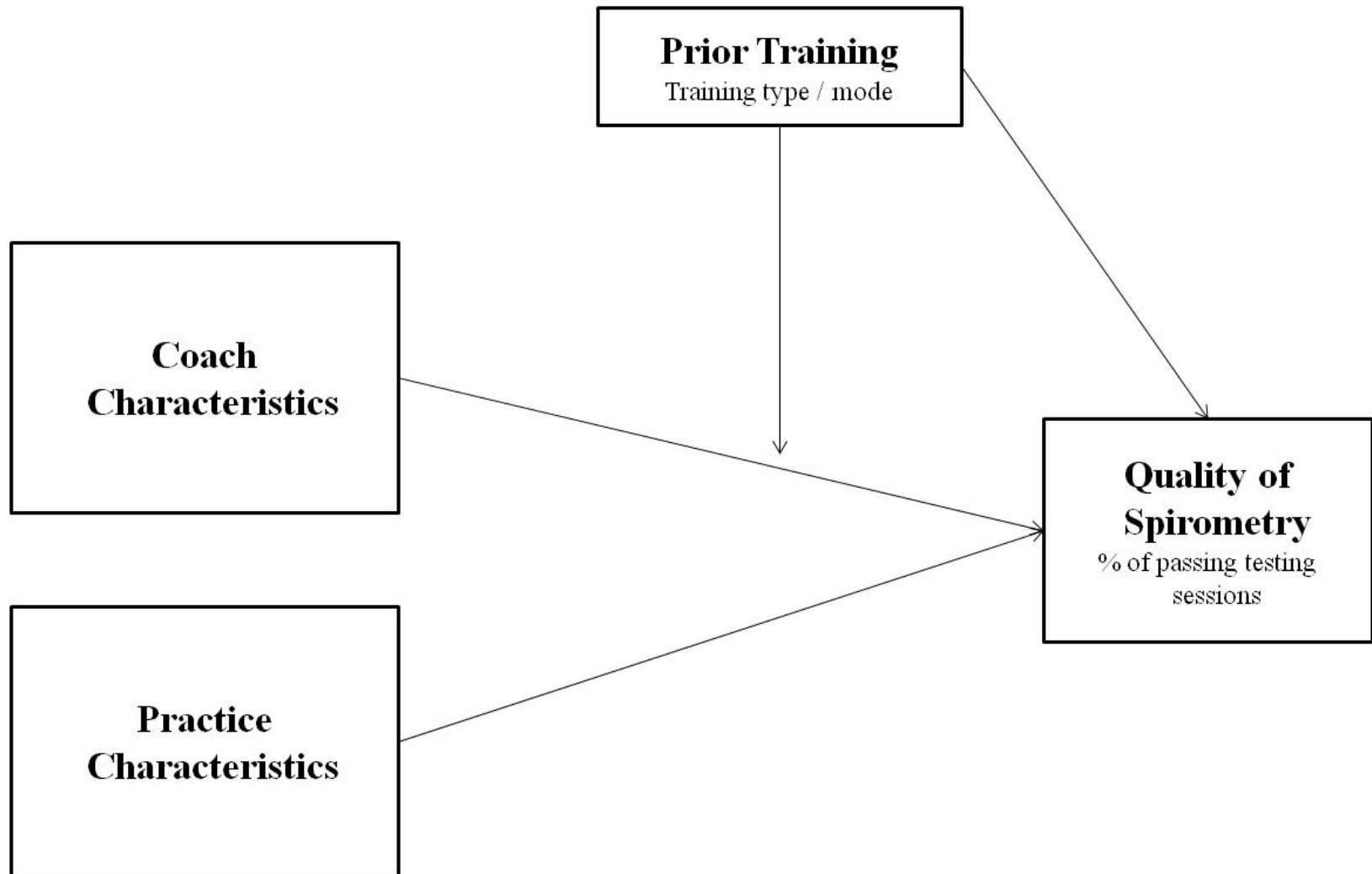
Methods – Study Design

- Background

  - Utilize existing RCT data

  - Collected to assess effectiveness of a distance-learning spirometry training CD-ROM

- Design

  - Prospective observational study

  - Control sites: Observe spirometry quality over 4-month period

Methods – Study Design *(continued)*

- Recruitment
  - Practice-based research network, spirometer warranty list, sales reps

- Subjects
  - MD/MA pairs from 21 primary care practices (control sites); practice is unit of analysis

- Measures
  - Spirometry testing session grades, descriptive data about study pairs

Methods – Analysis

- **Primary outcome:** Average % of testing sessions which received a passing grade

- **Bivariate analyses**
  - ANOVA and Student's t-test
  - Pearson correlation coefficient

- **Multivariate analyses**
  - Two linear regression models – coach & practice
  - Likelihood ratio test

Results

- Overall quality was poor
  - Internal & Family Medicine = 7% (SD 11%) passing
  - Pediatric = 25% (SD 13%) passing

- Pediatric offices had significantly higher passing tests ($p = 0.01$) compared with family medicine

- Non-significant trend ($p = 0.06$) private solo better than private group

- Prior training had no effect

Discussion – Conclusion

- Spirometry quality is poor
  - Correct diagnosis and severity assessment is crucial
  - The only objective measure of lung function recommended

- Providers need training and support
  - Standard vendor training is not sufficient

Discussion – Limitations

- Relatively small sample size

- Data are from offices who agreed to be part of research study, limited generalizability

- Pediatric offices part of other research network

Discussion
Implications for Policy & Practice

- Contributes to growing body of research

- Clinical guidelines & national quality standards
  - Need to implement training and performance measurement/enforcement

- Correct spirometry = improved disease monitoring
  - Reduced burden on patients, families, health care system, and public health infrastructure

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