Effectiveness of Direct Clinical Observation and Feedback For the First Year Pediatric Residents in the Ambulatory Settings: A Cohort Study

Joshua Bonville[1], Uzma Rani[2]
[1] MD, Clinical Assistant Professor of Pediatrics, SUNY Upstate Medical University, Syracuse, NY
[2]MD, MPH, Clinical Assistant Professor of Pediatrics, SUNY Upstate Medical University, Syracuse, NY

Background

- Medical school and residency training play an important role in the professional development of physicians.
- Medical interviewing, interpersonal skills, and examination skills are considered important pillars of clinical training.
- A study published in 1993 showed that there is limited emphasis on the above-mentioned skills during the medical school education.
- The work of AAMC group showed that many medical students have insufficient clinical, medical interviewing and complex social situation management skills after completion of their medical degree.
- Based on the AAMC group report from 1993, Lane et al. designed a Structured Clinical Observation (SCO) tool to teach clinical skills to the third-year medical students during their busy rotations.
- A similar SCO tool was used by Hamburger et. al for the resident education in a continuity clinic setting. The study found improved satisfaction and confidence in pediatric resident after direction observation and feedback. SCO tool was found to be useful for objective evaluation.

Objectives

- To assess the effectiveness of Direct Clinical Observation (DCO) and feedback by implementing a modified SCO tool for the first-year pediatric residents in the ambulatory settings

Methods

Study Design:

- This was a Cohort study
- Modified SCO tool was used during and after DCO and feedback
- A control group underwent a DCO in the 2nd half of their intern year
- The next academic year, an intervention group then underwent a DCO in the 1st half and in the 2nd half of their intern year

The Inclusion Criteria:

- All first-year pediatric residents while rotating at an outpatient clinical setting.

Study Instrument:

- The study instrument was based on SCO published by Lane et al in 1999 and Hamburger et al. in 2011.
- This instrument was divided in 4 domains:
  - *Interpersonal skills (15 items)*
  - *History taking (10 items)*
  - *Physical Examination (6 items)*
  - *Information giving (11 items)*

Intervention:

- An approval for exemption was obtained from the IRB.
- Verbal consent was obtained from all participating residents
- A preceptor made initial evaluation based on the modified SCO tool
- Each SCO tool item had three responses: ‘Yes’, ‘No’ and ‘Not applicable’
- An in-person feedback was given based on the modified SCO tool.

Control Group:

- Control group consisted of first year residents rotating through outpatient clinic in the 2nd half of intern year. This attempted to control for the natural progression of intern year competency

Methods

Statistical Analysis

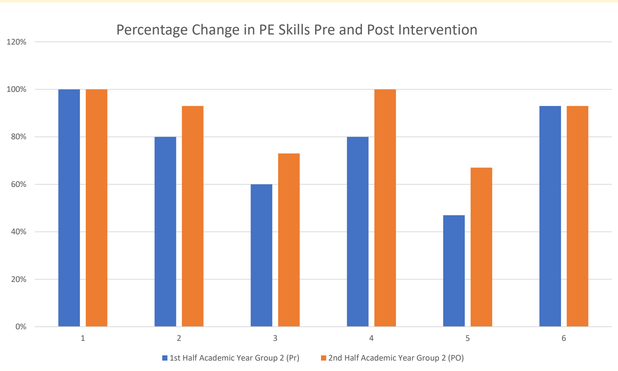
- A decision was made to calculate the percentage of each response of the modified SCO tool.
- Using absolute percent change, each net domain change was calculated
- Absolute percentage change was calculated between 1st half (Pre) and 2nd half (Post) DCOs. Absolute percent change was calculated between the Control and Post groups.

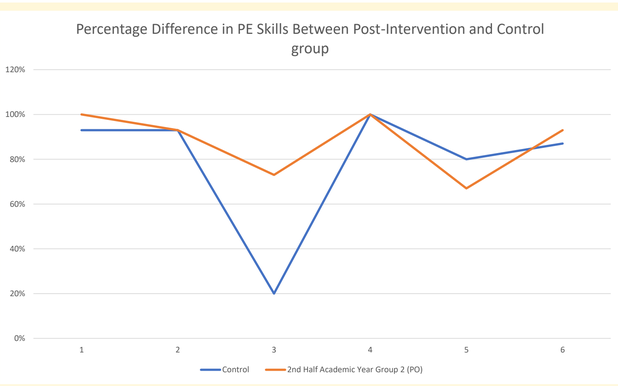
Table 1: Modified SCO tool: four domains with items

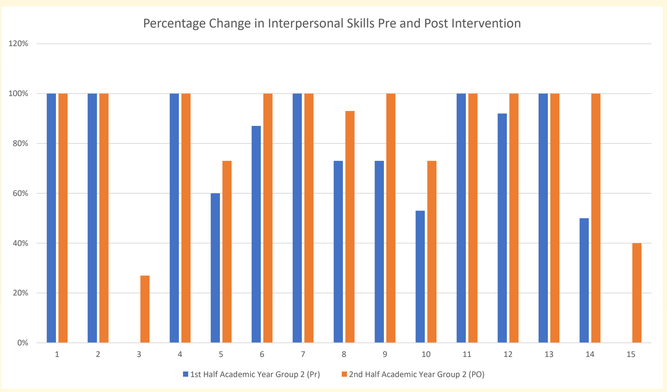
Interpersonal Skills
Knocks upon entering (1)
Introduces self (2)
Asks for name of those in room (3)
Fully present throughout interview (4)
Calls parent/child by name (5)
Includes child in interview as appropriate (6)
Good eye contact (7)
Good body language/positions sellf appropriately (8)
Appropriate EMR Utilization (9)
Ackonwledges role of computer (10)
Attentive listening (head nod/mhm) (11)
Reflects on concerns expressed by patient/parent (12)
Receptive to emotional response of patient/parent (13)
Manages language barrier (short sentences for interpreter, clarified when needed) (14)
Utilizes motivational interviewing (15)
History Taking
Utilizes open ended questions (1)
Allows patient/parent to complete thought (2)
Redirects patient/parent when appropriate (3)
Logical question sequence (4)
Avoids leading questions (5)
Avoids multiple part questions (6)
Asks any remedies or therapies tried (OTC/non-traditional) (7)
Asks about any other sick contacts or who cares for child on regular basis (8)
Elicits patient/parents concerns of what is happening/what brought them in today (9)
Summarizes information gathered (10)
Physical Exam
Washes hands/Gel in (1)
Appropriate exam for complaint (2)
Demonstrates correct technique for exam (3)
Minimizes patient discomfort while maximizing patient safety (4)
Explains what is happening for each portion of exam (5)
Gel out (6)
Information Giving
Explains confidentiality with adolescent patient (1)
Limits use of medical jargon/explains medical terms when used (2)
Explains diagnosis (3)
Explains management plan (4)
Includes parents/patients in decision making (5)
Adapts plans when appropriate based on parent input (6)
Explains need for and when to follow up/provides appropriate anticipatory guidance (7)
Uses visual reinforcement when appropriate (8)
Confirms patient understanding of treatment plan (9)
Solicits questions (10)
Provides summary of discussion given (11)

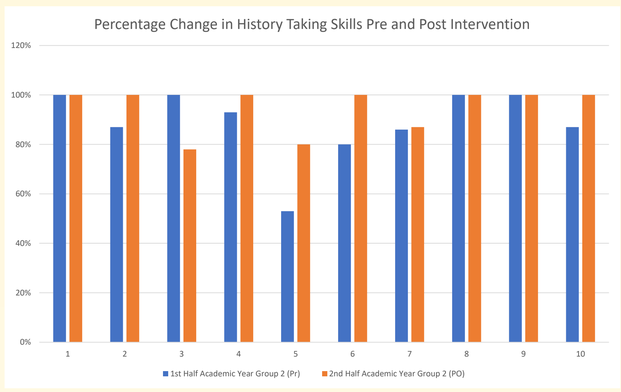
Results

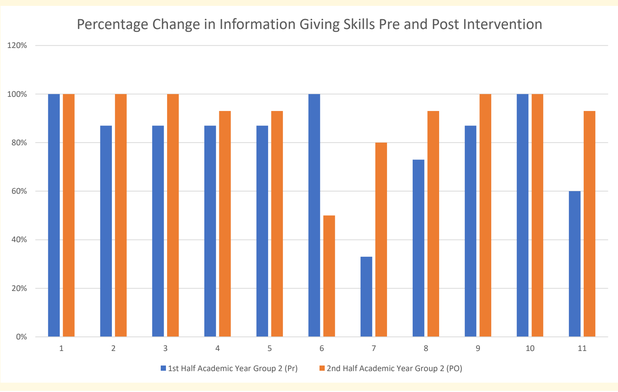
- Sample size was 15 in Pre and Post intervention group
- Sample size for Control group was 15
- Positive net domain change was observed in all four domains in the Pre vs Post-intervention group. In the Control vs Post-intervention group, positive net domain change was noted for Interpersonal, History Taking and Physical Exam Skills. There was a small negative net domain change for Information Giving Skills.
- Overall the Pre vs Post-intervention group had a bigger percent change for all domains when compared to the Control vs Post-intervention group.

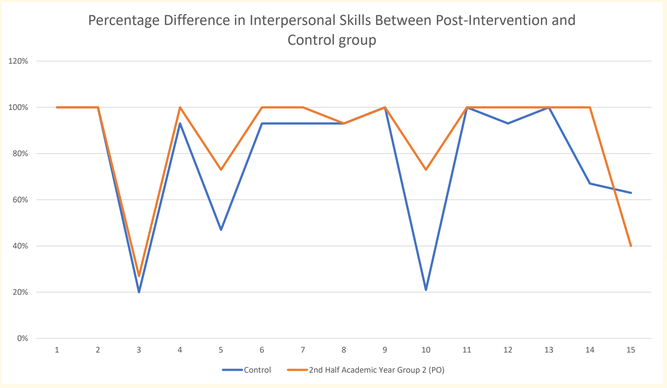


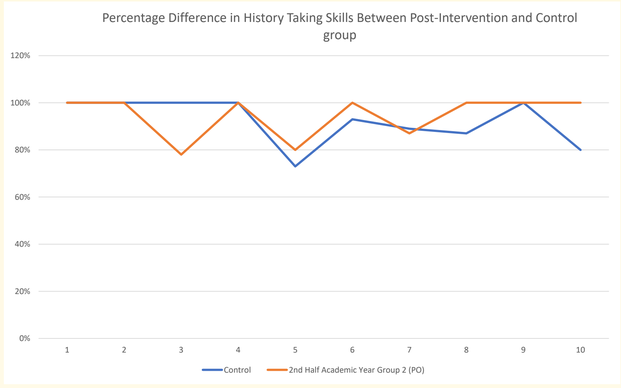


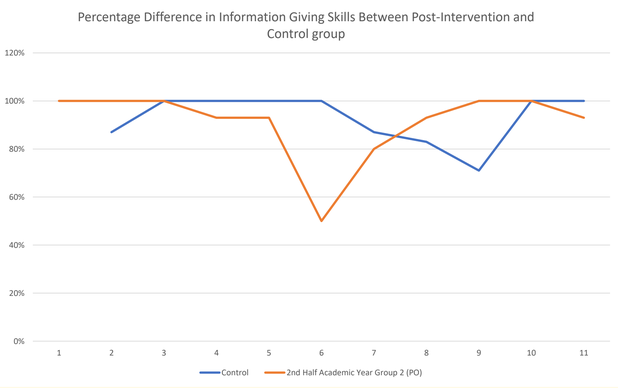












Conclusions

- Structured Clinical Observation tools, Direct Clinical Observations and immediate feedback can help to enhance the clinical education for pediatric residents in the ambulatory setting.
- Larger controlled studies are needed to assess the feasibility, effectiveness and cost-effectiveness of SCO tool use in multiple facets of resident education

References

1. Lane JL, Gottlieb RP. Structured clinical observations: a method to teach clinical skills with limited time and financial resources. Pediatrics. 2000 Apr;105(4 Pt 2):973-7. PMID: 10742358.
2. Novack DH, Volk G, Drossman DA, Lipkin M Jr. Medical interviewing and interpersonal skills teaching in US medical schools. Progress, problems, and promise. JAMA. 1993 Apr 28;269(16):2101-5. PMID: 8468764.
3. Hamburger EK, Cuzzi S, Coddington DA, Allevi AM, Lopreiato J, Moon R, Yu C, Lane JL. Observation of resident clinical skills: outcomes of a program of direct observation in the continuity clinic setting. Acad Pediatr. 2011 Sep-Oct;11(5):394-402. doi: 10.1016/j.acap.2011.02.008. Epub 2011 Jun 17. PMID: 21684232.