Respiratory Care Education Annual

The American Association for Respiratory Care

Volume 22 Fall 2013

Original Contributions

Editorial Staff

Respiratory Care Education Annual is a publication of the American Association for Respiratory Care, 9425 N. MacArthur Blvd., Ste. 100, Irving, TX 75063-4706. *Respiratory Care Education Annual* is a refereed journal committed to the dissemination of research and theory in respiratory care education. The editors seek reports of research, philosophical analyses, theoretical formulations, interpretive reviews of the literature, and point-of-view essays. Manuscripts should be submitted in three copies. The title page should contain (a) the title of the manuscript; (b) full names, institutional affiliations, and positions of the authors; and (c) acknowledgments of formal contributions to the work by others, including support of the research, if any. The first page of the article should repeat the title of the article and include an abstract of *no more than 250 words*. The name(s) of the author(s) should not appear on this or any subsequent page of the text. For rules governing references and style, consult *Guidelines for Authors* found at http://www.rcjournal.com/guidelines_for_authors/. Manuscripts that do not conform to these standards will be returned for revision. Send all submissions and editorial correspondence to the following address:

Education Department
American Association for Respiratory Care, 9425 N. MacArthur Blvd., Ste. 100, Irving, TX 75063-4706

Respiratory Care Education Annual
Volume 22, Fall 2013, 10-13

Inter-rater Reliability of a Respiratory Therapy Preceptor Training Program

Crystal Dunlevy, EdD, RRT, RCP

Sarah Varekojis PhD, RRT, RCP

Georgianna Sergakis, PhD, RRT, RCP

Abstract

BACKGROUND: While most respiratory therapy (RT) programs rely heavily on the preceptor model to provide clinical education, there is currently no standardized training program for clinical preceptors. New accreditation standards issued by the Commission on Accreditation for Respiratory Care (CoARC) in June 2010 mandated that RT programs provide evidence of inter-rater reliability among preceptors who perform student evaluations. The purpose of this study was to develop a standardized clinical preceptor training program that can be used by RT programs in preparing instructors to deliver effective clinical education and meet CoARC requirements. **METHODS:** The authors developed Clinical PEP (Practices of Effective Preceptors), a preceptor training program comprised of three modules (short PowerPoint presentations with scripted notes and videos illustrating both ineffective and effective implementation of module topics). Modules were evaluated in two rounds by RT preceptors (12 and 33, respectively) at Wexner Medical Center at The Ohio State University. Three experienced RT educators individually evaluated and categorized preceptor responses in order to determine consensus estimates of inter-rater reliability based on percentage agreement. **RESULTS:** RT preceptors evaluated eight videos and identified 29 ineffective behaviors. Inter-rater reliability was excellent for 20 behaviors (69%) and good for 9 behaviors (31%). **CONCLUSIONS:** The study revealed that the Clinical PEP training program has a high degree of inter-rater reliability. Further, this preceptor training program could be used nationally to fulfill an important RT education program accreditation requirement.

Key Words: clinical education, preceptor education, inter-rater reliability, preceptor training

Crystal Dunlevy, EdD, RRT, RCP
Clinical Associate Professor
The Ohio State University, College of Medicine, School of Health & Rehabilitation Sciences, Respiratory Therapy Division, Columbus, OH

Sarah Varekojis PhD, RRT, RCP
Clinical Assistant Professor
The Ohio State University, College of Medicine, School of Health & Rehabilitation Sciences, Respiratory Therapy Division, Columbus, OH

Georgianna Sergakis, PhD, RRT, RCP
Clinical Assistant Professor, The Ohio State University, College of Medicine, School of Health & Rehabilitation Sciences, Respiratory Therapy Division, Columbus, OH

Special thanks to our RT student writers, directors, and actors:
Class of 2011 – Lufta Bana RRT, Jacob Beach, Amanda Gradert RRT, Raimie Lewis RRT, Kathleen Stark RRT and Carlton Stewart RRT
Class of 2012 – Grace Leisenheimer RRT, Amanda Smith RRT and Brie Van Der Griend RRT

Correspondence and Request for Reprints:
Crystal Dunlevy, EdD, RRT, RCP
Clinical Associate Professor
The Ohio State University
School of Health & Rehabilitation Sciences, Respiratory Therapy Division
453 W. Tenth Avenue, 306 Atwell Hall
Columbus, OH 43210

Introduction

Although most respiratory therapy (RT) programs rely heavily on the preceptor model to provide clinical education, there is currently no standardized training program for clinical preceptors. This lack of standardized training may result in inconsistent and/or substandard education of respiratory therapy students in the clinical setting. Results of a 2004 study by Rye, Boone, and Neal-Rice underscored the importance of the clinical preceptor in the education process, concluding that the relationship between student and preceptor is the foundation of the RT clinical learning experience.[1] Further, accreditation standards issued by the Commission on Accreditation for Respiratory Care (CoARC) in June 2010 mandated that respiratory therapy programs "develop processes that facilitate the development of inter-rater reliability among those individuals who perform student clinical evaluations."[2]

According to CoARC standards, one way for RT programs to demonstrate compliance is to have clinical preceptors complete appropriate training – a strategy that has been effective in the nursing profession. A 2000 study conducted by Kaviani & Stillwell assessed the effectiveness of a 100-hour long preceptor program for clinical nurse educators.[3] The authors identified an overwhelming need for preceptor preparation due to the positive impact that the program has on student learning. Another study conducted in 2009 by Gross-Forneris and Peden-McAlphine reported that preceptors who had completed preceptor training were better able to develop critical thinking skills in their students.[4]

A study performed by Patrick, Rye, and Kennedy showed wide variation in evaluation of respiratory therapy students by clinical preceptors.[5] During the 2007 AARC Summer Forum, respiratory care educators attended a session entitled, "A Method of Evaluating Inter-rater Reliability" where they participated in a mock preceptor training session. Participants were asked to identify which of the 28 DataArc Nasal Cannula competency tasks were critical for demonstrating competency. Participants lacked agreement as to which DataArc items were "critical," leading the authors to conclude that, "… student assessment is based on educator preference and not on accepted standards of procedure performance." This study demonstrated a need for standardized training in student evaluation so that it is done correctly and consistently.

Both RT hospital managers and directors of RT education programs agree that standardized preceptor training is needed in order to provide students with comparable clinical experiences. In 2009, Rye and Boone surveyed respiratory therapy program directors about clinical preceptor training. One-third of the respondents indicated that no training was provided to preceptors. Training that was provided for the remaining two-thirds varied from one hour to six weeks. Eighty-one percent of directors responded that they believed a standardized training program is needed by the profession.[6] Barriers to provision of training were identified by RT program directors and included lack of time or resources or both; lack of incentives for participants; lack of a training curriculum; and staffing shortages that would prevent preceptors from completing the program. A similar study by the authors that surveyed respiratory therapy hospital department managers produced nearly identical findings (one-third of clinical preceptors did not receive any formal training; 79% reported a need for a standardized training program).[7]

The CoARC accreditation requirement for preceptor training, coupled with the findings described above, indicates the need for a standardized RT clinical preceptor training program. RT programs typically satisfy the CoARC inter-rater reliability requirement by having preceptors watch videos of RT students completing checklists, and comparing their assessments. But, inter-rater reliability is defined as, "the consistency with which two or more raters evaluate the same data using the same criteria."[8] Therefore, clinical preceptors can demonstrate a high or a low degree of inter-rater reliability by evaluating student or preceptor performance – the key component is the evaluation of performance. The purpose of this study was to develop a standardized preceptor training program with a high degree of inter-rater reliability that could be completed in a reasonable amount of time either on site or online.

Methods

Based upon a review of medical and educational research and input from RT students, educators and hospital-based preceptors at The Ohio State University (OSU), the authors identified topics to be included in the preceptor training program. These topics were further organized into the following modules: Principles of Adult Learning; Remember What It's Like; and Evaluation and Feedback. The "Principles of Adult Learning" module addresses the issues of autonomy, self-direction, the value of students' life experiences, and the importance of creating learning experiences that are relevant and practical; "Remember What It's Like" stresses the importance of support and supervision while providing many opportunities for practice; "Evaluation and Feedback" focuses on defining evaluation criteria early in the student's clinical rotation and providing feedback that is honest, descriptive, and prompt. Each module consists of a PowerPoint presentation with scripted notes and short videos depicting ineffective and effective preceptors demonstrating the behaviors introduced in the presentation.

RT students and faculty at OSU composed scripts for eight different scenarios and filmed and edited 16 videos (eight videos with the ineffective preceptor and eight with the ef-

fective preceptor) over the course of two years. In all there were 23 PowerPoint slides, and viewing time for the 16 videos was less than 30 minutes.

An online course was created through OSU's online learning management system that OSU preceptors could access at any time. The training program was entitled "Clinical PEP: Practices of Effective Preceptors." OSU preceptors were asked to review each module's PowerPoint presentation and notes, watch the accompanying ineffective videos, record errors made by the ineffective preceptor in each one, and view the parallel effective preceptor videos to see the mistakes corrected.

Three RT educators with a combined 60 years of experience in RT education individually evaluated and categorized preceptor responses in order to produce a complete list of ineffective behaviors. Consensus estimates of inter-rater reliability were determined by percentage agreement. The two most common ways to measure inter-rater reliability are percent of agreement and correlation – the authors chose percent of agreement over correlation because it is conceptually simpler and easier to calculate. For percentage agreement, the agreement rate (A) was the observed agreement (O) divided by the possible agreement (P). Therefore A=O/P.[9]

Results

"Principles of Adult Learning" and "Evaluation and Feedback" modules were created during the first year and evaluated by 12 preceptors. These modules included five videos portraying an ineffective preceptor; participants identified 20 ineffective behaviors. The "Remember What It's Like" module, created a year later, added three ineffective preceptor videos and was evaluated by 33 RT preceptors along with the existing modules. Twenty-nine ineffective behaviors were identified in this final version.

Consensus estimates of inter-rater reliability for each ineffective behavior was determined by percentage agreement and categorized as excellent (80 – 100%), good (60 – 79%), moderate (40 – 59%) or slight (20 – 39%).[10] Inter-rater reliability was classified as excellent for 20 behaviors (69%) and good for 9 behaviors (31%). Table 1 summarizes the ineffective behaviors identified by the RT clinical preceptors and the inter-rater reliability for each behavior as determined by percentage agreement.

Conclusions

Prior to the new CoARC standards (June 2010), RT education programs were not required to demonstrate evidence of inter-rater reliability among preceptors in order to obtain or maintain accreditation. Therefore, the medical literature lacks studies on the subject of inter-rater reliability among RT clinical preceptors.

Table 1
Inter-rater Reliability of RT Preceptor Behaviors.

Ineffective Behavior	Preceptor Agreement (%) = 45 unless otherwise indicated
VIDEO: LABELING (Adult Learning)	
Used electronics (cell phone)	92
Appeared uninterested & condescending	70
Gave minimal/poor direction	100
Assigned student a task that was not relevant	84
VIDEO: IPPB TREATMENT (Adult Learning)	
Annoyed to be assigned student; condescending	75
Gave minimal/poor direction	98
Did not review patient condition/indications for therapy, set-up, or operation of IPPB machine	92
Did not answer questions	100
Provided no supervision during treatment	92
VIDEO: MDI Instruct (Adult Learning)	
Appeared hurried and condescending	100
Did not value/acknowledge student's experience/input	92
Provided incomplete and incorrect instruction	92
VIDEO: O_2 Set-Up (Remember What It's Like)	
Embarrassed student for asking a question; condescending	100 (n=33)
Focused on a minor detail that the student missed vs. providing positive reinforcement for correct behaviors	87 (n=33)
Refused to allow the student to perform the task	92 (n=33)
VIDEO: Cardiac Output (Remember What It's Like)	
Made the student feel unprepared and ignorant	100 (n=33)
Interrupted the student	75 (n=33)
Quizzed the student with rapid-fire questions without providing answers/explanations	92 (n=33)
Did not review any aspect of the task, dismissing the student and performing the task herself	75 (n=33)
VIDEO: RT as Career Choice (Remember What It's Like)	
Caused students to feel badly about their career choice	75 (n=33)
Made derogatory comments about the RT profession	92 (n=33)
VIDEO: Performance Evaluation (Evaluation & Feedback)	
Began session with a negative comment	75
Did not provide an explanation for "bad attitude"	84
Waited too long to address the problem	75
Did not solicit feedback from other preceptors	92
VIDEO: Feedback (Evaluation & Feedback)	
Did not provide review, instruction or guidance re: procedure	75
Corrected student in front of patient	100
Embarrassed student	84
Did not instruct student on how to improve	75

The Clinical PEP program has been transferred to DVD and consists of the three modules described above as well as a workbook where preceptors can record their results and compare their answers with the answer key provided in the workbook. Clinical PEP can be completed online or offered on site, all at once or in sessions. Because the entire program can be completed in approximately two hours, it may serve as a convenient and cost-effective alternative to traditional clinical preceptor training.

Future research should be conducted to evaluate the training program in terms of both quality and effectiveness.

Based upon the high degree of inter-rater reliability produced by the Clinical PEP Training Program, our project may serve as the foundation for a standardized clinical preceptor training program that could be used nationally to fulfill an important RT education accreditation requirement.

References

1. Rye KJ, Boone EL, & Neal-Rice H. The meaning of preceptorship in respiratory care clinical education. Respiratory Care 2004;49(11):1380.
2. CoARC: Commission on Accreditation for Respiratory Care. Accreditation standards for the profession of respiratory care. Essentials/Standards revised 2010;21.
3. Kaviani N, & Stillwell Y. An evaluative study of clinical preceptorship. Nurse Education Today 2000;20:218-226.
4. Gross-Forneris S, Peden-McAlpine C. Creating context for critical thinking in practice: the role of the preceptor. Journal of Advanced Nursing 2009;65(8):1715-1724.
5. Patrick E, Rye KJ, & Kennedy R. Critical tasks of the DATAARC nasal cannula competency: A survey of respiratory care educators. http://www.rcjournal.com/abstracts/2009/?id=666597. Accessed February 22, 2013.
6. Rye KJ, & Boone EL. Respiratory Care Clinical Education: A Needs Assessment for Preceptor Training. Respiratory Care 2009;5(7):868-877.
7. Rye KJ, & Boone EL. The Need for Preceptor Training According to Respiratory Therapy Managers. Respiratory Care Education Annual 2009;18:11-22.
8. Salkind NJ, ed. Encyclopedia of Measurement and Statistics. Thousand Oaks, CA:SAGE Publishing; 2006:485-7.
9. Grayson K, Rust R. Interrater reliability. Journal of Consumer Psychology 2001;10:71-3.
10. Marques JF, McCall C. The application of inter-rater reliability as a solidification instrument in a phenomenological study. The Qualitative Report 2005;10(3);439-62.