Respiratory Therapy Administrators' Perceptions of Effective Teaching Characteristics of Clinical Preceptors

Abdulelah M Aldhahir, Abdallah Y Naser, Douglas S Gardenhire

BACKGROUND: Clinical preceptors in respiratory therapy (RT) are expected to possess effective teaching skills and qualities that signify their knowledge, expertise, and professionalism. Thus, it is important to determine which teaching characteristics are effective among RT clinical preceptors from the administrators' perspective as well as the predictors for the administrators' decisions. **METHODS:** A cross-sectional survey study of RT administrators was conducted in hospitals in a major southeastern metropolitan area in the United States. We used the modified version of the Effective Clinical Instructor Characteristics Inventory, which consists of 35 questions that cover 3 main domains: professional competence (15 questions), relationship with the students (8 questions), and personal attributes (12 questions); questions were answered according to a 5-point Likert scale (ranging from 1 to 5). Multiple linear regression analysis was used to identify predictors of clinical preceptors' selection, reflected in their final scores. **RESULTS:** A total of 34 RT administrators participated in this study, representing 18 health care institutions. The response rate was 54.8%. Participants showed the most interest in the professional competence of clinical preceptors, with a total mean score of 68.6 ± 4.4. This characteristic was followed by personal attributes and relationship with students, with mean scores of 53.8 ±4.8 and 35.8 ± 3.4, respectively. The perception of managers from different managerial positions toward preceptors' professional competence showed a statistically significant difference ($P = .042$). The variable defined as years in clinical practice as a respiratory therapist was negatively associated with participants' final scores. **CONCLUSIONS:** This study indicates that the professional competence of clinical preceptors is believed by RT administrators to be the most important behavioral characteristic. The results also indicate that role modeling and showing genuine interest in patients and their care are the most effective teaching characteristics of clinical preceptors. *Key words: administrators; behavior; clinical preceptor; instructor; perceptions; respiratory therapy.* [Respir Care 2020;65(2):191–197. © 2020 Daedalus Enterprises]

Introduction

The majority of undergraduate health care education programs have changed markedly during the past decade and are now focusing more on the importance of student learning in clinical settings.[1-3] Students in respiratory therapy (RT) programs are required to go through clinical rotations that differ from other allied health care programs. In these rotations, RT students acquire essential skills such as attitudes, knowledge, clinical experience, and clinical

Mr Aldhahir is affiliated with the Department of Respiratory Therapy, Faculty of Applied Medical Sciences, Jazan University, Jazan, Saudi Arabia. Dr Naser is affiliated with the Department of Applied Pharmaceutical Sciences and Clinical Pharmacy, Faculty of Pharmacy, Al-Isra University, Amman, Jordan. Dr Gardenhire is affiliated with the Department of Respiratory Therapy, Lewis College of Nursing and Health Professions, Georgia State University, Atlanta, Georgia.

Correspondence: Abdulelah M Aldhahir MSc RRT RRT-NPS, Department of Respiratory Therapy, Faculty of Applied Medical Sciences, Jazan University, Jazan, Saudi Arabia. E-mail: aaldhahir@jazanu.edu.sa.

skills, which prepare them for the modern clinical environment.[4,5] Students need clinical experience because it enables them to accurately practice patient care and implement theory and knowledge from the classroom.[5] However, there has been a noticeable lack of clinical instructors due to staffing shortages in different health care education programs.[4,6,7] It has been reported that the ratio of preceptors to students is inadequate because of a shortage in faculty staff members in most respiratory care departments.[8] As a result, hospital-based staff teach students in clinical rotations.[9] These hospital-based preceptors can link the theoretical education with clinical experience for students who are seeking to work in hospitals.[10] The benefits of using the preceptorship method include providing a larger pool of instructors and increasing the number of clinical sites.[9]

The process of preceptorship involves pairing an experienced clinician with a novice learner. Clinical skills are transferred under close supervision to prepare the learner to become a qualified clinician in the future.[5,11] Although preceptorship exposes students to the pressures of patient interaction and the daily practice of other health care providers, it ensures that they deliver safe, effective, and efficient patient care.[12] Using a qualified respiratory therapist as a preceptor is essential for this process to be successful.[5] The selection of preceptors in the health care environment is often based on the therapists' free time or willingness to work with students.[11] A previous study conducted in Oman investigated students' perception of effective clinical instructors.[12] Furthermore, a recent integrative literature review highlighted the main perceived characteristics of an effective nursing clinical instructor. However, there are no studies that have investigated the perception of effective teaching characteristics of clinical preceptors from RT administrators' perspective. Therefore, there is a genuine need to set standard criteria for selecting respiratory therapists as preceptors.

Methods

Study Design

This cross-sectional study was conducted using an online survey between June and September 2015 in a major southeastern metropolitan area of the United States to determine which teaching characteristics of clinical preceptors are deemed to be effective from the perspective of RT administrators. This study was approved by the institutional review board of Georgia State University in Atlanta, Georgia.

Sampling Strategy

A convenience-sampling technique was used to recruit RT administrators from the participating health care cen-

QUICK LOOK

Current knowledge

Clinical preceptors in respiratory therapy have the crucial role of providing students with clinical experience that enables them to accurately practice patient care and implement their knowledge. It is important to determine which teaching characteristics of clinical preceptors are effective from the perspective of respiratory therapy administrators.

What this paper contributes to our knowledge

We found that respiratory therapy administrators judged professional competence to be the most important behavioral characteristic for respiratory therapy preceptors. In addition, the most effective teaching characteristics were role modeling and showing genuine interest in patients and their care.

ters. All RT administrators, including directors, managers, supervisors, educational coordinators, assistant directors, and assistant managers, based in a large southeastern metropolitan area of the United States were invited to participate in this study.

The Questionnaire Tool

We used a previously validated questionnaire, the modified version of the Effective Clinical Instructor Characteristics Inventory (ECICI),[13] in this study to determine which teaching characteristics of clinical preceptors are seen as effective from the RT administrators' perspective and the predictors of their decisions. The ECICI questionnaire was originally developed and validated by Madhavanpraphakaran et al.[14] The questionnaire was modified using the Q-sort method to identify the effective teaching characteristics of clinical instructors according to undergraduate RT students and integrated graduate RT students.[13] The modified ECICI questionnaire is composed of 35 items covering 3 domains: professional competence, educator–student relationship, and personal attributes. In addition, the questionnaire was used to gather demographic information about respiratory therapists including position, number of years in current position, number of years practicing as a respiratory therapist, gender, education level, and whether the participant had selected a clinical preceptor before (see the supplementary materials at http://www.rcjournal.com). The modified instrument was tested in terms of reliability and validity by an expert panel in RT education and through a pilot study.[13] A preexisting questionnaire has the advantage of being a validated and tested

instrument, which increases the reliability of the results.[14] In addition, the adaptation and use of previously created questionnaires allows for comparison with different populations.[15] The questionnaire was sent to 62 RT administrators via the Survey Monkey application (San Mateo, CA). Respiratory therapists who participated in the study were asked to indicate the degree of applicability of each item using a 5-point Likert scale, ranging from 1 to 5, where 1 means least important behavioral characteristics and 5 means most important behavioral characteristics. The total possible score for the ECICI questionnaire ranged between 5 and 175. The higher the score, the more likely that RT preceptors would be chosen according to his/her behavioral characteristics. The mean ± SD score for each behavioral characteristic was calculated; a higher score indicated that the characteristic was deemed important, whereas a lower score indicated that participants did not believe that behavioral characteristic to be important.

Reliability of the Questionnaire

The Cronbach alpha measures for the 3 domains of the ECICI questionnaire ranged between 0.84 and 0.88. The overall Cronbach alpha measure for the ECICI was 0.94, which is deemed satisfactory.

Statistical Analysis

Data were analyzed using SPSS 22 (SPSS, Chicago, Illinois). The descriptive analysis was reported as mean ± SD for quantitative variables. Descriptive statistics were used to describe participants' demographic information. Categorical data were reported as percentages and frequencies. The mean ± SD score for each item was calculated based on participants' response using the 5-point Likert scale. In addition, the total mean score for each factor was calculated to allow for comparisons between different factors. Participants' scores were interpreted as a continuous scale, using the scale midpoint. Scores above the midpoint identified that the given behavioral characteristic of the clinical preceptors was important for that factor. The mean scores of the participants were compared to explore variations in the acceptability score (ie, the overall score of the questionnaire) between different demographic groups. Kolmogorov-Simonov and Shapiro-Wilk tests were used to check the normality of the data. Neither test was statistically significant ($P \geq .05$), indicating that the data were normally distributed.

The Student t test/one-way analysis of variance and the Pearson correlation coefficient were used to compare the mean scores of different demographic groups and to analyze the correlation between continuous independent variables and participants' scores. In addition, significant predictors of the scores were determined using multiple linear regression analysis, with parameter estimates and their 95% confidence intervals presented.

Table 1.   Demographic Information of the Sample

Gender	
Females	19 (55.9)
Males	15 (44.1)
Position	
Director	7 (20.6)
Manager	8 (23.5)
Supervisor	5 (14.7)
Educational coordinator	6 (17.6)
Assistant manager	6 (17.6)
Other	2 (5.9)
Educational degree	
Associate's	5 (14.7)
Bachelor's	22 (64.7)
Master's	6 (17.6)
Doctorate	1 (2.9)
Years in RT practice	24.4 ± 10.1
Years in current position	7.4 ± 5.5
Chose clinical preceptor before	32 (94.1)

Data are presented as n (%) or mean ± SD.
RT = respiratory therapy

Results

Participants' Characteristics

Of the 62 RT administrators included in the e-mail blast, 34 participated in the study. The response rate was 54.8%, representing 18 health care institutions in a major southeastern metropolitan area. Many of the participants were managers and directors, representing 44.1% ($n = 15$); 55.9% ($n = 19$) of the participants were female. Table 1 provides further details on the demographic characteristics of the participants.

Participants' Acceptability Score

The overall average score of the questionnaire was 158.2 ± 11.7. When the total score for each domain of the questionnaire was calculated, the professional competence domain was the most important behavioral characteristic of the clinical preceptor as chosen by the participants, with a total score of 68.6 ± 4.4. This characteristic was followed by personal attributes and relationship with students, with 53.8 ± 4.8 and 35.8 ± 3.4, respectively.

All of the participants ranked the behavioral teaching characteristics denoted as "demonstrates skills, attitudes, and values that are developed by students in clinical area (role modeling)" and "shows genuine interest in patients and their care" as the most important behavioral charac-

Table 2.   Most Effective Clinical Teaching Characteristics Ranked by All Participants

Item No.	Behavior Description	Category	Mean ± SD
PC10	Role modeling	Professional competence	4.83 ± 0.37
PC2	Shows genuine interest in patients and their care	Professional competence	4.83 ± 0.37
PC4	Shows clinical skill competence	Professional competence	4.80 ± 0.40
PA1	Demonstrates good communication skills	Personal attributes	4.75 ± 0.43
PC11	Facilitates critical thinking in clinical practice	Professional competence	4.72 ± 0.45
PA11	Exhibits responsibility	Personal attributes	4.72 ± 0.45
RS8	Be approachable	Relationship with students	4.72 ± 0.45
PC6	Able to communicate knowledge and skills to the students for safe practice	Professional competence	4.72 ± 0.45
PC3	Demonstrates knowledge of respiratory therapy in the area of instruction	Professional competence	4.69 ± 0.46
PA10	Responds confidently	Personal attributes	4.66 ± 0.47

Item No, represent the item number in each category (For eg: PC10, professional competence item number 10 in the ECICI).
PC = professional competence
PA = personal attributes
RS = relationship with student

teristics of the clinical preceptors. Table 2 shows the mean scores of the top 10 most effective clinical teaching behavioral characteristics ranked by all participants. Further details on the most important and effective clinical teaching behavioral characteristics as categorized by the RT administrators are available online (see the supplementary materials at http://www.rcjournal.com).

Participants' Demographics and Acceptability Score

The variable defined as years in clinical practice as a respiratory therapist was negatively correlated with the participants' score. Pearson's correlation coefficients between participants' years in practice and the combined score for relationship with students, personal attributes, and total acceptability score were −0.417, −0.369, and −0.385, respectively, which indicate a weak negative correlation. There was no statistically significant difference in participants' total acceptability score (P values were 0.84, 0.10, and 0.72 for gender, position, and educational degree respectively) (Table 3).

The score of the professional competence domain showed statistically significant differences based on the position of the participants ($P = .042$). However, the scores of the "relationship with students" and the "personal attributes" domains did not differ significantly between participants ($P = .042$). Tables 4, 5, and 6 provide further details on correlations between participants' demographics and their scores for each domain.

Predictors of Score

Multiple linear regression was used to investigate factors that had a significant association with the participants' total score regarding the behavioral characteristics of clinical pre-

Table 3.   Total Acceptability Score by Participant Characteristics

Variable	n	Score, mean ± SD	t / F	P
Gender				
Male	15	154.8 ± 11.1	−1.54	.84
Female	19	160.9 ± 11.7		
Position				
Director	7	154.4 ± 15.1	2.07	.10
Manager	8	165.8 ± 9.8		
Supervisor	5	160.2 ± 8.9		
Educational coordinator	6	148.2 ± 9.5		
Assistant manager	6	160.7 ± 9.9		
Other	2	159.0 ± 1.4		
Educational degree				
Associate's	5	153.4 ± 2.9	0.455	.72
Bachelor's	22	158.4 ± 13.0		
Master's	6	161.8 ± 12.1		
Doctorate	1	157.0		

ceptors. Two multiple regression analysis models were conducted. The first model included 3 variables: gender, years in current position, and years in practice as a respiratory therapist. The second model included all of the participant demographics. The first model showed that years in practice as a respiratory therapist was negatively associated with the participants' total scores (−0.486, $P < .05$). The second model did not find a statistically significant association between participants' scores and demographic factors.

Discussion

The aim of this study was to determine the most important behavioral characteristics of RT preceptors according to the RT administrators who are responsible for assigning the RT preceptors, ensuring professionalism and ethics, and maintaining proper conduct at all times.

Table 4. Professional Competence Score by Participant Characteristics

Variable	n	Score, mean ± SD	t / F	P
Gender				
Male	15	67.3 ± 4.0	−1.64	.47
Female	19	69.7 ± 4.5		
Position				
Director	7	67.4 ± 5.4	2.69	.042
Manager	8	71.4 ± 3.9		
Supervisor	5	69.4 ± 2.3		
Educational coordinator	6	64.2 ± 3.1		
Assistant manager	6	70.0 ± 3.8		
Other	2	69.0 ± 0.0		
Educational degree				
Associate's	5	66.8 ± 1.9	0.388	.76
Bachelor's	22	68.7 ± 4.8		
Master's	6	69.7 ± 4.5		
Doctorate	1	69.0		

Table 5. Relationship With Preceptors Score by Participant Characteristics

Variable	n	Score, mean ± SD	t / F	P
Gender				
Male	15	35.2 ± 3.2	−0.95	.74
Female	19	36.3 ± 3.6		
Position				
Director	7	34.9 ± 4.4	0.935	.47
Manager	8	37.6 ± 3.3		
Supervisor	5	36.4 ± 3.0		
Educational coordinator	6	34.0 ± 3.5		
Assistant manager	6	36.0 ± 2.6		
Other	2	35.5 ± 0.7		
Educational degree				
Associate's	5	33.6 ± 0.9	1.04	.39
Bachelor's	22	36.0 ± 3.7		
Master's	6	37.2 ± 3.2		
Doctorate	1	36.0		

Table 6. Personal Attributes Score by Participant Characteristics

Variable	n	Score, mean ± SD	t / F	P
Gender				
Male	15	52.3 ± 4.9	−1.60	.55
Female	19	54.9 ± 4.4		
Position				
Director	7	52.1 ± 5.7	1.82	.14
Manager	8	56.8 ± 3.7		
Supervisor	5	54.4 ± 4.2		
Educational coordinator	6	50.0 ± 4.6		
Assistant manager	6	54.7 ± 4.4		
Other	2	54.5 ± 0.7		
Educational degree				
Associate's	5	53.0 ± 2.2	0.21	.89
Bachelor's	22	53.7 ± 5.3		
Master's	6	55.0 ± 5.0		
Doctorate	1	52.0		

Important Characteristics of Effective Clinical Preceptor

The findings of this study highlighted that professional competencies and relationship with students were noted by the participants as the most important behavioral characteristics of the clinical preceptor, which aligns with findings of a previous study conducted in Oman.[14] This similarity indicates that these behavioral teaching characteristics are important, regardless of the study location or settings.

In addition, our study found that there was a statistically significant difference between males and females regard-ing the most important behavioral characteristics among preceptors. This finding aligns with previous literature that highlights that males and females differ in their learning style preferences and health education needs.[16,17] Moreover, we found that the importance of professional competence differed based on the position of the RT administrator. This variation could be because senior RT administrators have different viewpoints and teaching preferences from their junior colleagues due to their greater experience in clinical practice.

Overall, RT department directors ranked "shows genuine interest in patients and their care" as the most important behavioral characteristic among RT preceptors. This finding is similar to results reported by Madhavanprapha-karan et al,[18] who argued that a lack of time, heavy work load, poor correlation between theory and practice, and lack of interest in direct patient care by the students are some factors that interfere with preceptorship. In the same way, behavior such as the preceptors' commitment to assist directly with patient care and being consistent during a shift are also seen as very important behavioral characteristics in teaching.[18] RT department managers ranked "responds confidently," "demonstrates good communication skills," and "facilitates critical thinking in clinical practice" as equally important teaching qualities among RT clinical preceptors. These 3 characteristics were closely followed by the qualities defined as "exhibits responsibility" and "responds confidently," which is consistent with a Mountain Area Health Education Center training recommendation (MAHEC), in which communication is seen an important skill that efficient clinical preceptors should possess.[19]

Similarly, a comprehensive understanding of concepts and fundamental skills are required to allow students to

acquire knowledge from a skillful clinical preceptor.[19] The RT supervisors claimed that being approachable, supportive, and helpful were among the most significant behavioral teaching characteristics in terms of establishing and maintaining a relationship with the students. Likewise, when it came to professional competence, the supervisors ranked the behavioral characteristics of facilitating critical thinking during clinical practice and showing clinical skill competence as the most important qualities for RT preceptors, which have also been highlighted in the literature.[20] This finding can be associated with the principles that motivate students to learn. As MAHEC recommends, teaching should build on the foundation of role modeling. Clinical preceptors, as role models, become a source of motivation and inspiration for the students, particularly where practical application of clinical skills and knowledge are concerned. As a result, students are provided with the opportunity to appreciate their craft and clinical training to a greater extent because of the increased responsibility expected from them.[19] The RT department's educational coordinators ranked the most important behavioral characteristics of preceptors under professional competence as role modeling, or the ability to demonstrate skills, attitudes, and values that are developed by the students in the clinical area, and showing clinical skills competence. These requirements are supported by Smedley's[21] revelation that role modeling helps students develop the necessary knowledge, clinical skills, and professional attitudes that are achieved through guidance, supervision, and personal development.[22] Moreover, this finding supports previous literature and emphasizes the importance of these behavioral teaching characteristics.[23,24] Likewise, the findings coincide with the belief that careful analysis further enhances learning, especially when the preceptor makes learning fun for the students. The key is the ability of the preceptor to be open to the students and to answer any questions they may have related to various clinical situations. This approach ensures motivation and adoption of effective learning styles.

The RT assistant managers indicated that the qualities that represent professional competence are the most important behavioral teaching characteristics. These characteristics include role modeling, the ability to communicate knowledge and skills to the students for safe practice, and the facilitation of students' awareness of their professional responsibility. Our findings are consistent with numerous studies that point out the impact of effective role modeling and collaboration and their effectiveness as teaching characteristics of RT clinical preceptors.[19,22,25]

It was notable that all participants ranked role modeling (ie, "demonstrates skills, attitudes, and values that are developed by the students in the clinical area") as the most important and effective clinical behavioral characteristics that RT preceptors should exhibit. The variable defined as years in practice was negatively associated with participants' total score. This finding could be because junior RTs have not yet developed an idea or impression about the behavioral characteristics that are required in an effective clinical preceptor, given that they are in the early stage of their career.

Implications and Recommendations for Future Research

The results of this study are advantageous for RT clinical preceptors because they offer valuable insight regarding effective behavioral characteristics of clinical preceptors that they may adopt and improve. The findings also encourage RT clinical preceptors to evaluate the teaching characteristics they currently possess and to decide upon which areas they may need to improve. From the perspective of RT administrators, there is a common understanding of the underlying teaching characteristics required. In the same manner, the study encourages colleagues and other members of the RT faculty to aid RT clinical preceptors in recognizing and improving their weaknesses and reinforcing their strengths. Moreover, this study contributes to the existing literature, particularly in determining the commonly perceived important teaching characteristics that RT clinical preceptors should exhibit. It may also help RT department administrators today and in the future establish specific criteria when selecting a clinical preceptor and standardize their requirements regarding effective teaching characteristics. Furthermore, this study recommends that RT clinical preceptors should work to improve attitudes, behaviors, and teaching qualities in the eyes of their students to attain their goals and objectives related to general clinical training and education. Further research is suggested due to the limitations of the existing study. The small sample size of our study might affect the generalizability of our findings; we suggest replicating our study with a larger sample size, including hospitals in a different area to validate the results we have presented. Our study is also limited by the fact that convenience sampling was used to exclusively select participants from among administrators in hospitals in a single metropolitan area.

Conclusions

Respiratory therapy administrators in hospitals of a major southeastern metropolitan area in the United States reported that the demonstration of clinical skills, proper attitudes, and ethical values, as well as role modeling and showing genuine interest in patients and their care, are the most important and effective teaching characteristics among RT clinical preceptors. Clinical preceptors are ad-

vised to focus on strengthening their attitudes and behaviors with the help of the findings highlighted in this study.

REFERENCES

1. McCarthy B, Murphy S. Preceptors' experiences of clinically educating and assessing undergraduate nursing students: an Irish context. J Nurs Manag 2010;18(2):234-244.
2. Gordon J, Hazlett C, Ten Cate O, Mann K, Kilminster S, Prince K, et al. Strategic planning in medical education: enhancing the learning environment for students in clinical settings. Med Educ 2000;34(10): 841-850.
3. Spencer J. ABC of learning and teaching in medicine: learning and teaching in the clinical environment. BMJ 2003;326(7389):591-594.
4. Kacmarek RM, Durbin CG, Barnes TA, Kageler WV, Walton JR, O'Neil EH. Creating a vision for respiratory care in 2015 and beyond. Respir Care 2009;54(3):375-389.
5. Rye KJ, Boone EL. Respiratory care clinical education: a needs assessment for preceptor training. Respir Care 2009;54(7):868-877.
6. Buchan J, Aiken L. Solving nursing shortages: a common priority. J Clin Nurs 2008;17(24):3262-3268.
7. Barnett T, Cross M, Jacob E, Shahwan-Akl L, Welch A, Caldwell A, et al. Building capacity for the clinical placement of nursing students. Collegian 2008;15(2):55-61.
8. Aljasser, Tariq. A Survey of Preceptor Training in Clinical Education of Respir Care Departments in Selected Hospitals in Metropolitan Atlanta. Master's thesis, Georgia State University, 2012. Available at: https:// scholarworks.gsu.edu/rt_theses/16. *Accessed August 6, 2019.*
9. Ownby K, Schumann R, Dune L, Kohne D. A comparison of a traditional clinical experience to a precepted clinical experience for baccalaureate-seeking nursing students in their second semester. Nurs Res Pract 2012;2012:276506.
10. Raines DA. Nurse preceptors' views of precepting undergraduate nursing students. Nurs Educ Perspect 2012;33(2):76-79.
11. Burns HK, Northcutt T. Supporting preceptors: a three-pronged approach for success. J Contin Educ Nurs 2009;40(11):509-513.
12. Barker ER, Pittman O. Becoming a super preceptor: a practical guide to preceptorship in today's clinical climate. J Am Acad Nurse Pract 2010;22(3):144-149.
13. Alasmari. A, Gardenhire D. Respiratory therapy students' perceptions of effective teaching characteristics of clinical instructors at an urban university. Respir Care Educ Ann 2015;24:11-18.
14. Madhavanprabhakaran GK, Shukri RK, Hayudini J, Narayanan SK. Undergraduate nursing students' perception of effective clinical instructor: Oman. Int J Nurs Sci 2013;3(2):38-44.
15. Mathers N, Fox N, Hunn A. Surveys and Questionnaires. The NIHR RDS for the East Midlands. Yorkshire & the Humber, 2007.
16. Wehrwein EA, Lujan HL, DiCarlo SE. Gender differences in learning style preferences among undergraduate physiology students. Adv Physiol Educ 2007;31(2):153-157.
17. Al-Khashan HI, Almulla NA, Galil SA, Rabbulnabi AA, Mishriky AM. Gender differences in health education needs and preferences of Saudis attending Riyadh Military Hospital in the Kingdom of Saudi Arabia. J Family Community Med 2012;19(3):172-177.
18. Madhavanpraphakaran GK, Shukri RK, Balachandran S. Preceptors' perceptions of clinical nursing education. J Contin Educ Nurs 2014; 45(1):28-34.
19. Mountain Area Health Education Center. The Effective Preceptor: An Educational Monograph For Community-Based Teachers. 2002. Available at: http://www.snhahec.org/EffectivePreceptor.pdf. *Accessed May 30, 2019.*
20. Hughes R. Patient safety and quality: An evidence-based handbook for nurses. Rockville, MD: Agency for Healthcare Research and Quality, 2008.
21. Smedley AM. Becoming and being a preceptor: a phenomenological study. J Contin Educ Nurs 2008;39(4):185-191.
22. Anderson JR, Taylor LF, Gahimer JE. Assessing the impact of a short-term service-learning clinical experience on the development of professional behaviors of student physical therapists: a pilot study. J Scholar Teach Learn 2014;14(4):130-143.
23. Irby DM, Papadakis M. Does good clinical teaching really make a difference? Am J Med 2001;110(3):231-232.
24. Ullian JA, Bland CJ, Simpson DE. An alternative approach to defining the role of the clinical teacher. Acad Med 1994;69(10):832-838.
25. Dunlevy C, Varekojis S, Sergakis G. Inter-rater reliability of a respiratory therapy preceptor training program. Respir Care Educ Ann 2013;22:10-13.