Perception of Nursing Students of a Good Clinical Preceptor: A study on Faculty of Medical Technical Sciences at Alzaiem Alazhari University, Khartoum, Sudan

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Research Article

Abstract
Nursing training is a blend of both theoretical and practical learning. Students learn practically in the clinical environment. Despite the progression in nursing education, in some clinical settings, the effective teaching behavior of clinical instructors is absent that affects student learning. The aim of this study is to assess nursing students' perception of a good clinical preceptor. A descriptive cross-sectional study design was used for the study. Data were collected from all 4th year nursing students (n=130) in the Department of Nursing at the Faculty of Medical Technical Sciences, Alzaiem Alazhari University (AAU). The result shows that 68 out of 130 (52.3%) nursing students considered teaching ability as very important followed by competencies 57 (43.8%).

Conclusion: Nursing students valued teaching ability and interpersonal relationships with the clinical nurse preceptor and considered these significant characteristics of clinical preceptors.

Keywords: Nursing Students, Perception, Preceptor, Clinical, Sudan
1. Introduction

Nursing is an honorable profession in the health care system that plays a significant role in developing the health care industry, provides proper holistic care to the sick, and supports the community in the best way. Every nurse is studying in a college, university, or hospital where s/he practice skills and demonstrate some necessary procedure which is the prior learning of the nursing students [1]. A competent nurse passed from many stages like training, education, demonstration, and teachers' guidance; nursing students took classes in classrooms and performed different skills in hospitals under the supervision of the clinical teaching faculty. The clinical teaching faculty plays a vital role in developing skills and competencies in nurses [2]. Nursing training is a blending of two learning, which are theoretical learning and practical learning. The student's theoretical learning from the classroom and practical learning a student learns in the clinical environment. Both learnings are significant for nursing students because, without theory, they cannot pass the exam in good grades, and without practical work, they cannot progress in the clinical environment. Both are important, but clinical learning is the more crucial clinical practice or clinical teaching that needs clinical teachers who supervise or instruct their students in performing skills. Nursing students face many persons in the clinical setting, including patients, doctors, and other health care workers. Nursing students can never administer proper care whenever their nursing instructors can learn about skills [3]. Nursing Students always observe their teacher's behavior, attitude, personality, and self-confidence and play a part as a model by which the students learn and absorb educators qualities; in the clinical context, nurses gain information from the behavior, knowledge, practice, and skills of their clinical trainer [4]. "Nursing students' awareness and experiences is the method of calculating effective clinical instructors' characteristics in nursing education [3]. A study carried out in Pakistan revealed that nursing students rate their teacher's behavior and attitude and also the way of learning in a high amleness, students learning are influenced by way of their teacher teaching the learning of undergraduate is greatly influenced by “explains clearly” from teaching ability and it is essential to explain the skills and lectures clearly and confidently [5]. The obligation of the clinical faculty is not only to provide knowledge and skills to the students in a clinical setting but also to realize to their students that they are a caregiver to the patients. A clinical instructor's teaching behavior plays a vital role in preparing a qualified nurse. Studies have shown that efficient clinical teacher behavior enhances student's learning process [6]. Characteristics of clinical teachers highly influence the learning of students in a clinical setting. Therefore the clinical teacher must know her roles and responsibilities should effectively teach and guide their students in the clinical site [7].

Students' learning greatly influences and is facilitated by evaluating their clinical teaching faculty that how they give comments to their students and how they guide their students plays a vital role in developing practical students. A qualitative study revealed that some teachers evaluated their students in a clinical environment without giving them opportunities to learn, which is frustrating and affects student learning [8]. It is evident that knowledgeable and qualified nursing instructors are the requisite of student learning in the clinical setting, and nursing instructors should have effective characteristics to teach adult learners [9]. Positive relationships and a supportive environment can enhance students learning. The clinical teacher developed the supportive relationship through educational support, emotional support, and social support. A positive and supportive relationship between clinical teachers and students has a long-lasting effect on clinical learning and professional development [10]. Clinical instructors have the opportunity to significantly influence their students' learning who eventually graduate and shape nursing practice. Clinical instructors must possess effective teaching characteristics such as professional knowledge, role modeling, and clinical competence with communication skills to facilitate optimal clinical learning [11]. A clinical preceptor behavior is differential behaviors demonstrated by the clinical nursing instructor facilitating the learning process as delineated on the NCTEI [12],
Characteristics: A distinguishing trait, behaviors perceived by a nursing student contributes to a positive learning experience in the clinical setting. Perception: An individual's awareness, understanding, opinion, or insight. In Sudan, there is no accessible information on a good preceptor in the clinical nursing practice. However, this study explores the level of perception of good clinical preceptors perceived by final-year nursing students.

2. Statement of the problem
Students learning in the clinical area are an essential part of clinical education, and it is needed to be effective. This all is possible by efficient teaching and instructors' behavior. Despite the progression in nursing education, in some clinical settings, the effective teaching behavior of clinical instructors is absent and affects student learning. That is why there is still a demand to understand effective clinical teaching behavior that influences learning [14]. The evaluation or any clinical student's feedback is the clinical teacher's responsibility, but this practice of clinical mentor is absent in clinical setting, and this matter is still unsolved [14]. There is a need for efficient clinical education, but the criteria for effective clinical teaching are still not correctly defined, so it is urgent to understand what type of teaching behaviors needs in the clinical setting. Lack of good teachers in clinical settings leads to negative experiences of nursing students in the clinical setting and frustrations during daily practice due to poor integration of theory into practice and lack of tutorial support and guidance of instructors [15].

3. Rationale and justification
To the excellent of the researcher's knowledge, no study was done here in Sudan concerning this problem. The skillful instructor could facilitate students to recognize knowledge impacted in clinical practice where they can work with and inspect a role model that enables them, through a process of reflection, to internalize the role model's behavior and build on previous knowledge and experiences [16]. The instructor's responsibility is significant in teaching and fostering skills reinforcement, furthermore in assessing, coaching, guiding, mentoring, counseling, inspiring, and supporting growth and development of new staff, particularly for new graduate nurses who have no previous experience working as registered nurses [17].

4. Research questions
1. Which clinical teaching behaviors have the maximum and minimum frequency of use?
2. What is the nursing student's perception toward effective clinical instructor's characteristics?
3. What is the relationship between clinical instructors' behaviors and nursing students' perceptions toward effective clinical instructor's characteristics?

5. Materials and Methods
5.1. Study design and Study area
A descriptive cross-sectional study design was used. The study was conducted in the Faculty of Medical Technical Sciences Department of Nursing, Alzaïem Alazhari University (AAUU), located in Khartoum North locality inside the Bahri campus which is, bounded on the West by information technology and languages center, on the South by Ahmed Gasim Street, on the North schools street, and the East Ahmed Gasim Hospital. It began as a department under the Faculty of Medicine and was starts by the general and special admission for awarding a bachelor's degree and diploma in Nursing and bachelor's degree in Anesthesia in the academic year 2002-2003, then by a decision of the Ministry of Higher Education based on the recommendation of the unified coordination of the Faculties of Health and Medical Sciences at the University Council, held on 4 April 2006, became a stand-alone College under the name of Medical Technical
Sciences which includes the Department of Nursing, Anesthesia, and Midwifery which offers bachelor’s degree in four years. The bridging of the Bachelor of Nursing began in the academic year 2006-2007 until now. In 2016 added department of Physiotherapy and in 2018 added another department of Nutrition and diet therapy. Also, after courses and research in 2012 by Master of Obstetrics and Gynecology and graduate three batches, another nursing program was approved but not started. In 2017 actions began to separate the nursing department to become an independent college under the Faculty of Nursing sciences, but the separation is not complete.

5.2. Study population and Sampling
All 4th year nursing students (n=130) in the Faculty of Medical Technical Sciences department of Nursing at AAU was included in the study. The 4th year students were selected because of their extensive exposure to clinical preceptors in different clinical settings.

5.3. Data collection methods and tools
Data was collected by the investigator using The Nursing Clinical Teacher Effective Instrument (NCTEI) developed by Mogan and Knox (1985) after permission taken from the author. This scale was designed to assess nursing students’ perceptions toward effective clinical instructor's characteristics that facilitate the learning process. The research instrument was chosen after reviewing related literature. It contains a 47-item checklist that describes discrete teacher characteristics clustered into five subscales or categories: (a) Teaching ability: the process of transmission of skills and attitudes and the creation of an atmosphere that facilitate the learning process; (b) Nursing competence: the clinical teacher's theoretical and clinical knowledge used in the practice of nursing; (c) Personality traits: the totality of the individual’s attitudes, emotional tendencies and character traits, which are not explicitly related to teaching, nursing or interpersonal relationships but may affect all three; (d) Interpersonal relationship: a state of mutual interest or communication between student and clinical instructor; and (e) Evaluation: the type and amount of feedback the student receives from the clinical instructor regarding clinical performance and written clinical assignments. The tool contained a five-point Likert scale ranging from 1 (Never/No important), 2 (Slightly important), 3 (Important), 4 (Very important) to 5 (Always/most critical). Students rated how the frequency of use of the clinical instructor characteristic facilitated their learning. Category scores are obtained by summing scores of all items within a category. Summing all five category scores provides a total score for the teacher. Higher scores imply more positive teacher characteristics. The tool was translated to an Arabic version by an expert. Also, the reliability and validity of the NCTEI were established through several methods. Initial reliability coefficients for each item ranged from .79 to .89 (Knox and Mogan, 1985). Reliability coefficients for the five categories during instrument development were: teaching .89, nursing competence .84, evaluation .82, interpersonal relationship .86, and personal traits .83. The reliability coefficients of both the individual items and the categories have remained stable during repeated instrument use. Test-retest reliability was reported to be acceptable (Knox and Mogan, 1985), with probability ranging from .76 to .93 (Knox and Mogan, 1987) [18]–[20].

5.4. Study variables
Dependent: perception of nursing students
Independent: characteristics of an excellent clinical preceptor.
Confounders: age, gender

5.5. Data management
The data was sorted, cleaned, categorized, coded, and analyzed using Statistical Package for Social Sciences (SPSS) version 25. The chi-square test was used to assess the relationship between
clinical teacher's behavior and student learning. Descriptive statistics (mean, SD, and Frequency) were used to analyze study variables and determine which characteristics students perceive as crucial for clinical nurse preceptors to be effective, and data was explained through frequency tables and figures for easy understanding.

5.6. Pilot Study
A pilot study was being carried out on nursing student batch four from the Faculty of Nursing Sciences, University of Khartoum; it equals 10% of the study population then rule out from the study. The total number of students who joined the study was 130 from the Faculty of Medical Technical Sciences, Department of Nursing at Alzaiem Alazhari university, which was 10% = 30 students—using Nursing Clinical Teacher Effective Inventory Instruments, which provides a comprehensive assessment to Perception of Nursing Students regarding a good clinical preceptor to test its internal consistency, reliability and construct validity. Moreover, the Cronbach alpha value was .715 in teaching ability, .818 in nursing competence, .895 in the evaluation, and .828 in interpersonal relationships and personality traits, which means the scale is precise, highly reliable valid can be applicable.

5.7. Ethical considerations
Official consent was obtained from the Sudan Medical Specialization Board- Educational Development Center. An official consent was obtained from the Faculty of Medical Technical Sciences dean at Alzaiem Alazhari University. Informed written consent was obtained from all the students. Each of the students was assured of confidentiality and a commitment that the research findings were used only for research purposes.

6. Results
Table 1 shows the socio-demographic characteristic of the study population, 99 (76.1%) of nurse students their age between 26 – 30 years while 113 (86.9%) were female.

<table>
<thead>
<tr>
<th>Items</th>
<th>Frequency</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-25</td>
<td>28</td>
<td>21.5%</td>
</tr>
<tr>
<td>26-30</td>
<td>99</td>
<td>76.1%</td>
</tr>
<tr>
<td>More than 30</td>
<td>2</td>
<td>1.5%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>13.1%</td>
</tr>
<tr>
<td>Female</td>
<td>113</td>
<td>86.9%</td>
</tr>
</tbody>
</table>

In table 2, teaching ability, most of the nursing students 68 (52.3) out of 130 they are said that teaching ability was very important followed by important 31 (23.8%), 57 (43.8) of nursing students said nursing competence was very important followed by important 43 (33.1%), most nursing students 54 (41.5%) they are said that evaluation was very important. 55 (42.3%) they are said that interpersonal relations were very important. 55 (42.3%) they are said that personality traits were very important.
Table 2: Factors that affect learning as reported by nursing students.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Rank</th>
<th>Frequency</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching ability</td>
<td>No</td>
<td>1</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>Slightly important</td>
<td>6</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>31</td>
<td>23.8%</td>
</tr>
<tr>
<td></td>
<td>Very important</td>
<td>68</td>
<td>52.3%</td>
</tr>
<tr>
<td></td>
<td>Most important</td>
<td>24</td>
<td>18.5%</td>
</tr>
<tr>
<td>Nursing competence</td>
<td>No</td>
<td>1</td>
<td>0.8%</td>
</tr>
<tr>
<td></td>
<td>Slightly important</td>
<td>4</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>43</td>
<td>33.1%</td>
</tr>
<tr>
<td></td>
<td>Very important</td>
<td>57</td>
<td>43.8%</td>
</tr>
<tr>
<td></td>
<td>Most important</td>
<td>25</td>
<td>19.2%</td>
</tr>
<tr>
<td>Evaluation</td>
<td>No</td>
<td>3</td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td>Slightly important</td>
<td>6</td>
<td>4.6%</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>36</td>
<td>27.7%</td>
</tr>
<tr>
<td></td>
<td>Very important</td>
<td>55</td>
<td>42.3%</td>
</tr>
<tr>
<td></td>
<td>Most important</td>
<td>30</td>
<td>23.1%</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>No</td>
<td>3</td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td>Slightly important</td>
<td>8</td>
<td>6.2%</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>34</td>
<td>26.2%</td>
</tr>
<tr>
<td></td>
<td>Very important</td>
<td>62</td>
<td>47.7%</td>
</tr>
<tr>
<td></td>
<td>Most important</td>
<td>23</td>
<td>17.7%</td>
</tr>
<tr>
<td>Personality traits</td>
<td>No</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Slightly important</td>
<td>3</td>
<td>2.3%</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>31</td>
<td>24.2%</td>
</tr>
<tr>
<td></td>
<td>Very important</td>
<td>55</td>
<td>42.7%</td>
</tr>
<tr>
<td></td>
<td>Most important</td>
<td>41</td>
<td>31.8%</td>
</tr>
</tbody>
</table>

7. Discussion
Clinical teaching is the heart of the nursing's professional program, and it remains the most critical resource in developing competent, capable, caring nurses [21]. In this study, the primary aim was to assess nursing students' perception of an excellent clinical preceptor in the Faculty of Medical Technical Sciences at Alzaiem Alazhari University, Khartoum North, Sudan. The aims and research questions of the research were achieved through the study findings.

In the first category, teaching ability, nursing students need help to organize their thoughts about patients' problems. Because nursing students are not familiar with the hospital environment, they are afraid of touching patients, cannot accurately assess them, and have difficulty formulating the nursing diagnosis. This result agreed with the study done by Moscaritolo, M. The finding showed that nursing students wanted the clinical preceptors to be knowledgeable and competent in their field and agree that knowledge and experience competence is an essential component for effective teaching [22]. So Teaching Ability is the most critical factor that affects student learning, as reported by nursing students [2], [13].

The second category, interpersonal relationship, regarding the relationship between the nurse clinical preceptors and their students in the clinical settings as an effective clinical teaching characteristic. The present study's findings stated that students perceive this characteristic as a critical effective teaching behavior. This finding was agreed with the study carried out by Cook, who stated that the behavior of clinical teaching faculty has a significant relationship with students learning; it prevails from his study that using effective teaching behavior influence the students' performance positively and states that 78% of the teaching staff are well prepared for their lectures and teach the students in an organized way [18].

The third category, nursing competence, clinical nurse preceptor knows how to function in clinical practice and guide students in developing their clinical competencies. The present study was
consistent with the study carried out by Jackson, B. A, showed that in clinical environment and hospital, Students learn about how to calculate medicine dosage and other advanced skills with the help of their clinical teacher as these skills are very important to provide good nursing care to the patient. It is the role of the clinical Instructor to guide his/her student correctly. Also agree with the study done and mentioned above that nursing competence is on third number ranking.

In the fourth category, personality traits, nursing students valued self-confidence most importantly. This trait in teachers can make students brave. They learn to trust nurse clinical preceptors that can lead to fear of poor performance during practicum. This current study was agreed with the study carried out by Lamia. M. N & et al. mentioned a direct correlation between effective clinical teaching behavior and student self-efficacy because as the use of effective clinical teaching characteristics increases, student self-efficacy also increases. Student learning will be enhanced, and student self-efficacy will be increased if nursing faculty use effective teaching characteristics or behavior in their clinical setting [3].

The final category, evaluation, is essential for nursing students since specific suggestions for improvement and feedback on students' performance were valued. Nursing is a practice-based discipline in which clinical evaluation plays a crucial role. Clinical evaluation is one of the complex tasks of faculty and health instructors and a challenge for nursing and other health professions [21]. In this study, the evaluation of nurse clinical preceptors was still limited to clinical requirements of nursing students, such as interpersonal communications, problem-solving, and professional tendencies. It is evident in nursing students and is a widespread behavior that they have some Anxiety and hesitation while interacting with patients. This all occurred in the students because the clinical teaching faculty did not give proper confidence to the students or did not focus on the students individually. This disagreed with it is revealed from the study of Khan, N. and B. Alam that 54% of the teaching faculty are failed to build confidence in their students by which the students feel difficulty in a future life [2].

8. Limitations
Firstly, the sample involved only fourth-year nursing students, so the results cannot be generalized to the whole nursing program, as needs differentiate based on year levels. Further research that assesses the differences in perception and needs for supervision between junior and senior students is recommended. Secondly, data were taken only from nursing students of the medical, technical sciences department of nursing; only one college was also a limitation of this study. Thirdly, shortage of time due to repeated closure of universities because of country status.

9. Conclusion
Nursing students valued teaching ability and interpersonal relationships with the clinical nurse preceptor and considered these significant characteristics of clinical preceptors. Clinical competence ranked the third position. Their personality, too, especially self-confidence, was essential and formative evaluation; giving suggestions and correcting mistakes without belittling them was likewise perceived as the lowest ratings by participants. These findings provide grounds for looking at clinical teaching in a new light. These findings provide an impetus for all nurse clinical preceptors to examine their practice. Opportunities to implement the effectiveness of clinical teaching that are most effective should be seized at every possible juncture.

10. Recommendations
The researchers recommended the following to nursing education and nursing administration: Establish an orientation program to prepare novice teachers about adult learning principles, assess students' needs, and evaluate student performance. Routine teacher evaluation to incorporate new behaviors into their practice. Nurse educators should use the NCTEI as a self-assessment and seek to incorporate behaviors not previously used or used infrequently into their
practice. Graduate programs curricula for nurse educators should include courses on clinical education. Workshops should be organized for clinical instructors on their roles in clinical teaching. Further research should compare clinical instructor characteristics with student success in mastering entry-level skills and competencies. Replication of this study with a broader student demographic and geographic area is needed to confirm and generalized the findings.

**Conflict of Interest:** The authors declare no conflict of interest.

**REFERENCES**


