Effects of Mentoring and Belongingness in The Clinical Setting

Jodi-Ann Douglas, MSRS, R.T.(R)

Allied health professionals are clinically trained individuals specializing in many different aspects of health care. In addition to the didactic component, allied health education programs, such as radiologic technology, consist of a clinical component. Clinical experience and education are instrumental to students who are learning to apply theory to practice.[1] Clinical education is an integral aspect of radiologic technology students' learning experience because it shapes the type of professional they will become through learned behavior and interactions with experienced professionals. Therefore, finding ways to enhance or improve students' experiences is useful to their development. Incorporating mentoring and belongingness in clinical education can help students succeed, and interactions in the clinical setting can influence the attitudes, knowledge, and clinical skills of students. Thus, in a clinical education setting, fostering mentorships and belongingness are essential for the progression and success of students' clinical education.

Roles and Responsibilities in Mentoring And Fostering Belongingness

Enriching the learning environment is vital in health care. Enrichment can be accomplished through mentorship because it is beneficial and influences medical imaging programs[2]; however, ensuring students establish belongingness also is necessary. In allied health programs, mentors typically are individuals who have more experience, expertise, and knowledge. Dunn argued that mentors serve as role models who share and use their own experiences to motivate, connect, and build a rapport with the mentee to facilitate learning.[1] Mentors can be an additional educational resource for advice and support; being open to listening as a mentor allows the student to be more receptive and feel comfortable confiding in the mentor. Mentors who are supportive and welcoming positively affect the student's confidence and ability to engage in clinical activities successfully.[3] However, to benefit from mentoring and to develop and grow skills, the student and the mentor should be actively involved in the mentorship. Moreover, students need to feel as if they are part of the team and establish a sense of belongingness to facilitate learning.[3] In addition to mentoring, having a sense of belonging provides the feeling of being included and connected, adding a level of acceptance[4] in a clinical setting that acts as a bridge to competency, self-efficacy, and the progression of clinical skills.

The current literature acknowledges that mentoring and belongingness have a substantial effect on a student's clinical experience, and the evidence suggests mentoring and belongingness are beneficial to a student's progression and development of clinical skills.[1,3-7] There is evidence that mentoring can help develop students' confidence and self-esteem through shared knowledge and experiences. Creating a sense of belongingness through an environment that is welcoming, supportive, beneficial, and accepting is the responsibility of the mentor, student, and other stakeholders such

as technologists and administrators in the department. This type of environment ensures the student gains crucial experience.[4-7] Creating learning opportunities and making the student feel comfortable in the clinical environment also are crucial to skill development and competency.[6] Having all participants share the responsibility encourages a better understanding and an improved working environment, reducing stress in the department. This sharing allows the student to take advantage of all clinical opportunities by asking questions and taking initiative without feeling pressured.[8]

Methodology

After an initial search of Google Scholar, a comprehensive search of related literature was conducted through multiple databases such as PubMed, Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete, and ProQuest. In addition, a search of the American Society of Radiologic Technologists journal *Radiologic Technology* was conducted. Keywords used to search included *belongingness, sense of belonging, mentor, mentorship, allied health, clinical environment, community,* and *radiologic technology.* Boolean terms AND and OR were used, and sources were limited to peer-reviewed journal articles. Articles published between 2010 and 2022 were selected to ensure current information. An exception was made for 1 article outside the criteria due to its relevance.

A review of abstracts, literature reviews, and studies regarding mentoring and belongingness specifically in the clinical setting were analyzed and selected; articles that discussed the clinical experience or environment more generally also were selected. If the article did not discuss mentoring and belongingness in a clinical setting or environment, it was eliminated. The reference lists of selected articles also were examined to identify additional relevant sources. Articles specific to other allied health professions, such as nursing, were included due to the limited scope of studies available on mentoring and belongingness in radiologic technology.

Results

Three themes that emerged from the literature review were differences between mentors and role models, effect of belongingness on students, and overall influence of mentors.

Mentors and Role Models

A mentorship can be an enriching experience; by building and fostering the relationship between student and mentor, the student's overall confidence increases, belongingness can be boosted, and stress level in the clinical setting can be reduced. A mentor is a more experienced and knowledgeable professional who guides an inexperienced individual toward their desired goal.[2,9] Dunn referred to a mentor as an individual who facilitates learning through shared experiences, guiding an inexperienced student through the profession while also acting as a confidant and cultivating clinical skills through support, advice, reassurance, and feedback.[1] Multiple articles noted that a mentor also can be a role model.[1,3,6,10,11]

Unlike a mentor, who takes an active role in a student's progress, a role model is an individual viewed as the example one aspires to become from afar, or by building a rapport. Mentors and role models can contribute to a student's success. Interacting with mentors and role models influences the student, leaving an impression. In the qualitative study conducted by Yates, a sample of students being mentored was surveyed, and radiologic technologists were interviewed about mentorship.[6] The technologists reported having been mentored in some capacity, identified mentoring as an important factor in their own development, and emphasized how important having a more experienced colleague had factored in their success. The students reported that they viewed their mentors as role models and would tend to use similar practice methods. The study also highlighted mentoring as an informal learning method[6]; other sources discuss mentoring as being informal or formal and conducted among peers or groups, remotely or one on one.[2,11]

Mentors and role models serve as examples that mold the type of technologist a student progresses into, and the interactions can have a lasting effect. The article by Vinales on nursing students in the clinical setting identified role models as a key factor in shaping a professional because they often are an imitation and reflection of a previous health professional.[3] This finding was further discussed by Dunn, who stated that mentors serve as role models.[1] In a clinical program, students have many sources of role models and mentors. Yates referred to clinical instructors in radiologic

technology as mentors because they assist students in adapting, functioning, and managing their clinical skills and eventually achieving competence in the profession.[6] In the study by Vinales, the mentors were nurses on the ward working together with the student.[3] Many practitioners, such as technologists, do not view themselves as mentors, but mentoring relationships can be formed among technologists and other professionals in the radiologic technology profession.[7,8] Comparably, Hirsch et al identified various levels of mentorship relationships, including student and faculty, clinical instructor and student, student and researcher or other stakeholder such as a staff radiologic technologist.[2] Students in radiologic technology spend a considerable amount of time in the clinical setting with staff technologists; hence, technologists working with students in the department can be viewed as mentors and role models.

Belongingness

Belongingness is the feeling of being a welcomed member and part of the team. In the clinical setting, it is essential to a student's growth and success. The article by Tremayne and Hunt discussed the value of having a welcoming clinical environment for students and its effect on the overall learning environment.[12] To achieve belongingness, an individual must feel accepted, connected, or valued.[4] Belongingness can be attained from clinical instructors, peers, technologists, and supervisors in a clinical environment. Support from peers allows students to feel accepted by creating a supportive environment where they can grow closer together and look out for each other when struggling. In a dissertation by Custard, the students in the study reported that having a sense of belongingness among the group for the duration of the program made them feel more comfortable asking questions, which provided support and contributed to their success.[5]

Technologists working with students in a clinical setting have a substantial effect on belongingness. Hamm highlighted the importance of the technologist and student relationship in the development of behaviors and skills.[8] Technologists can provide support as mentors and create an atmosphere that is welcoming to cement belongingness within the department and profession. Tremayne and Hunt offered some methods to help students feel this way, including ways to reduce students' anxiety by greeting them and being willing to include them.[12] McVoy and Waite emphasized the students' role in establishing belongingness through a proactive approach to learn and work hard.[4] In a clinical setting, Hirsch et al mentioned that mentoring among students and employees should be valued by administrators because students' perception of and interest in the facility can be affected.[2] This also was evident in the study by Jack et al, which reported that ineffective management can deter and influence the professional team.[13] Hence, in a radiology department, managers should make students feel as if they belong in the clinical setting because managers set the overall tone in an imaging department.

Influence of Mentors and Belongingness

Mentors and belongingness can affect the overall skills, competency, and self-efficacy of a student in the clinical setting. The qualitative study by Levett-Jones and Lathlean explored the connection between desire to belong and competence of nursing students in Australia using the Ascent to Competence framework, concluding that competence can only be achieved after the 5 steps (safety, security, belongingness, healthy self-concept, and learning) are reached.[14] The authors also highlighted the elements needed and the importance of having a sense of belonging in developing competent, confident nursing professionals who see themselves as capable professionals. Levett-Jones and Lathlean asserted that achieving belongingness is vital and necessary for students to learn and be successful in a clinical setting and eventually attain competency.[14] Similarly, the qualitative study by McAvoy and Waite explored belongingness among operating department practitioner students in a clinical setting in the United Kingdom, highlighting the importance of feeling like a part of the team and the student's role in achieving belongingness.[4] This study also provided insight into how feeling valued or burdensome influenced the quality of the student's clinical experience and reaching their full potential. A study of perceived unfairness by Jack et al assessed how nursing students in the United Kingdom valued belongingness and having an enthusiastic mentor, which is important for supporting the

students.[13] The study found that the students experienced feeling unsupported, ignored, or being unfairly treated at times, and highlighted the value of having a supportive mentor. The authors concluded that a collaborative approach should be used, and students should be valued in the clinical setting.

A student's motivation, confidence, and self-efficacy can be affected if a sense of belonging is not present and a mentor is not efficient in a clinical learning environment; hence, the characteristics of a mentor or role model determine how effective and efficient they are when interacting with students and influence a student's sense of belongingness. The literature suggests that being an effective mentor requires specific attributes such as the desire and willingness to invest time, support, and guidance to mentees, so that they evolve into competent and independent professionals.[1,9,11] For example, the study by Yates acknowledged the desire to teach as a characteristic a mentor should possess and asserted that the most important characteristics of a mentor and role model are being calm, patient, approachable, kind, open to questions, and taking pride in the profession.[6] Mentors also should welcome students and always present a positive disposition. Tremayne and Hunt highlighted that establishing a positive rapport and culture of belongingness can assist students with motivation and clinical skills.[12] These authors also suggested methods for creating a clinical environment that is welcoming to students. In the study by Levett-Jones and Lathlean, students felt their levels of motivation, involvement, and satisfaction were determined after interpersonal relationships were cemented.[14] The study concluded that a receptive clinical setting could benefit learning and self-efficacy. It also established that to achieve competence, motivation, and confidence in a clinical setting, a sense of belonging is needed and important to a student's learning experience.

Discussion

Creating an effective clinical learning environment for students is important to the development of clinical skills. Through mentoring and belongingness, student learning can be influenced positively or negatively. Mentors and role models, especially in the clinical setting, are important and instrumental to participants' experience, learning, and development into future technologists.[5,11] As suggested by the research, in a supportive, receptive, and positive clinical learning environment, students can thrive while being guided by a mentor, especially after belongingness is established. Not feeling welcomed can hinder student progress in becoming efficient and competent technologists. Although clinical instructors are present, students often work closely alongside staff technologists in radiology departments; therefore, fostering a positive environment is important when students attend clinical rotations to observe and learn skills from technologists. However, there is evidence reporting that students often feel unsupported, unwelcome, or ignored,[7,8,13] especially when they first enter the clinical setting.

When students are admitted to a clinical environment, they are entering a new atmosphere in which they must learn to maneuver while also interacting with patients, technologists, and other health care professionals. Navigating an unfamiliar environment can be difficult for the student, and as expressed by Vinales, factors that affect belongingness, such as not feeling as a part of a team, can limit students' learning and motivation.[3] Although technologists can sometimes feel it is challenging to work alongside students, for students to feel supported and welcomed, technologists must be approachable and respectful.[7,13] Therefore, mentors should assist with the integration of the student in the learning environment so students can feel like a member of the team. After the student establishes positive belonging, which is feeling valued, embraced, or included, the quality of the student's experience, confidence, and ability to achieve their full potential increases.[4] As seen in the study by Yates, students were encouraged and felt comfortable when errors were made and needed to be corrected, contributing to the creation of a positive learning environment.[6] Hence, creating rapport, feeling comfortable, and being encouraged are keys to a student's belongingness and being receptive to advice. Furthermore, fostering participation by entrusting the students with tasks helps to show the student is capable and trusted. These findings are consistent with Tremayne and Hunt, who acknowledged that through feedback and constructive criticism student satisfaction

and motivation increase, which in turn makes them feel noticed and that they matter.[12] After students begin to feel they belong, their attitude and demeanor might evolve, affecting overall success and competency.

Conversely, in a negative clinical environment where mentoring is not nurtured and belongingness is not established, students can be deterred, and their clinical skills and ability can be impeded. Negative belonging is expressed as feeling unwelcome, burdensome, or excluded in a setting.[4] In addition, students should feel respected and valued because lack of this feeling can lead to a reduced desire to be present and work in the clinical setting, affecting competency. Reasons for a negative experience in the clinical setting include feelings of being in the way of the technologist's workflow, lack of interaction, and increased frustration for the student and mentor. These roadblocks can hinder a student's growth.[7] This finding is consistent with the evidence presented by Vinales on feelings of belonging[3] and the findings in the informal study of student clinical experience and perception by Sandridge.[15] Although 2 radiography clinical sites were examined, which affects the study's generalizability, the results analyzed confidence when in a specific clinical setting. In the study, 1 site was deemed effective and the other as less effective. Graduates who attended the less effective site rated themselves lower for all levels of confidence, including communication, overall patient care skills, image evaluation, and confidence in technical skill. Sandridge concluded that confidence is directly influenced by the clinical learning environment.[15] As a result, the student's confidence, overall motivation, and willingness to try new cases can be reduced, eventually affecting their self-efficacy along with their desire to continue pursuing the profession.

Multiple articles argued that a negative clinical experience or not feeling as part of the team is not only the fault of the mentors but the students as well because students have as much responsibility to be proactive, ask questions, take initiative and advantage of all clinical learning opportunities in the clinical environment; students also have a responsibility to accept constructive criticism.[4,6-9,11] Furthermore, when students feel they cannot fit in, they tend to conform to the way technologists practice, affecting the student's proficiency in skills, but not in the way the educational institution intended. When students felt a lack of belongingness, Levett-Jones and Lathlean noticed effects such as a reduction in motivation and confidence and an increase in anxiety, leading to the students conforming to the way the staff worked, even if the students knew it was not the correct way of practicing.[14] In addition, student self-concept or self-efficacy was affected. Similar findings for reasons to conform were found in the articles by McAvoy and Waite, and Hamm.[4,8]

The articles in this review indicate that mentoring is an impactful and enriching tool that can increase belongingness, encourage and challenge students by facilitating critical thinking along with independence in solving problems, and reduce feelings of isolation in the clinical learning environment.[2,6,10] Having technologists make students feel comfortable, embraced, and that they belong in the clinical environment is essential to students' overall success, knowledge, and skill.

Limitations and Recommendations

Despite the number of articles detailing the clinical environment and experiences of students, as well as the role of clinical instructors, mentors, and role models in the clinical environment for radiologic technology and allied health professions, there are a limited number of scientific studies related to student clinical experience and perceptions. Most studies in this review focused on nursing students because no specific studies on belongingness and the influence of mentorship in radiologic technology could be found at the time of the literature search. A qualitative or quantitative study specific to mentoring and belongingness among radiologic technology students in a clinical setting could be conducted to establish generalizability. Expanding the study's scope to include the didactic portion of these programs or other allied health programs for comparison purposes might be beneficial.

Conclusion

Having a practical mentor and establishing a sense of belongingness are integral components of a student's clinical learning experience, and the presence or absence of these can lead to positive or negative influences on students' overall knowledge, attitude, and

skills. The creation of an environment where students can thrive and not be deterred is beneficial and has an effect on clinical progression. In a clinical setting, a mentor can reinforce, inform, and guide students, and belongingness secures a connection, leaving students feeling accepted and part of the team and profession. The relationship built between students and mentors, such as technologists, can lead to rewarding and beneficial learning opportunities. As students grow, the technologist can assist them in fulfilling their potential as future technologists, and the technologist as a mentor passes along their skills and experiences. By ensuring students have a supportive and positive experience with a mentor, as well as a sense of belonging in the clinical setting, students' competency, self-efficacy, and overall clinical learning experience can be enhanced so that they progress successfully.

Jodi-Ann Douglas, MSRS, R.T.(R), is senior college laboratory technician and adjunct lecturer in the Radiologic Technology and Medical Imaging Department at New York City College of Technology of the City University of New York.

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