

Assessment of Assertive Communication Skills Among Clinical Rotation Radiography Students of Nnamdi Azikiwe University

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Abstract: Assertive communication is a core skill especially in multidisciplinary team. Assertive communication among health professionals is an important element of patient safety efforts in health care. We assessed the current levels of assertive communication skills among final year student radiographers of Nnamdi Azikiwe university during clinical rotations. We also identified the challenges and barriers faced by student radiographers in practicing assertive communication in clinical settings. Data collected were analysed using SPSS version 20. 80 (52.98%) were males. The study revealed that 80 (52.98%) of participants would not intervene in the face of patient compromises. 78 (51.66%) reported that they will not question the radiographer if he does not give the patient a lead apron but rather provide a lead apron. This study showed that instead of students speaking up verbally, they prefer to do it the nonverbal way. Most students get confused when they observed what pertains in clinical practice and what has been taught in class and this affects them in clinical examinations. Most of the respondents are not very likely to speak up but instead, they prefer to do it non-verbally. If students are to speak up in the face of patient compromises, they will do so before any harm is done but tension or nervousness and the attitude of the clinician seems to be the factors affecting their assertiveness.

Keywords: Assessment, Assertive Communication Skills, Clinical Rotation, Radiography Students

Introduction

Radiography plays a crucial role in modern healthcare, utilizing imaging technology to diagnose and treat medical conditions [1]. As part of their training, student radiographers undergo clinical rotations in healthcare settings, where they apply theoretical knowledge in practical scenarios [2]. Effective communication is vital during these rotations to ensure accurate patient care, facilitate interprofessional collaboration, and enhance overall patient outcomes [3].

Assertive communication is a key component of effective healthcare communication. It involves expressing one's thoughts, needs, and concerns in a respectful yet confident manner [4]. In healthcare settings, including radiography, assertive communication is essential for advocating for patient safety, clarifying treatment plans, and collaborating with multidisciplinary teams [5]. Assertive communication is essential for final year student radiographers during clinical rotations as it enhances patient care, professional development, and teamwork. Assertiveness allows radiographers to clearly convey instructions, advocate for patient safety, and handle challenging situations effectively [6]. It fosters confidence and professionalism, crucial for transitioning into professional roles [7]. In clinical settings, assertive communication enables students to address conflicts and collaborate with healthcare professionals, ensuring efficient and cohesive teamwork

[8]. This skill is particularly important in advocating for patient safety by identifying risks and adhering to protocols [9].

During clinical rotations, final-year student radiographers encounter various challenges related to assertive communication. These include navigating hierarchical structures within healthcare teams, balancing assertiveness with respect for authority, and adapting communication styles to different clinical settings [10]. The transition from student to practitioner requires developing assertive communication skills to effectively communicate with patients, peers, and senior healthcare professionals [11].

Clinical rotations provide a critical learning environment where radiography students apply theoretical knowledge to real-world scenarios [12]. However, studies indicate that students often struggle with assertiveness, which is essential for ensuring accurate information transfer and patient management [13]. These rotations provide opportunities for students to refine their technical skills, clinical judgement, and communication abilities under the guidance of experienced professionals.

Effective communication is crucial in the healthcare field, particularly in radiography, where clear and assertive communication can impact patient care and safety [14]. Radiographers, especially during their final year clinical rotations, face numerous challenges requiring assertive communication skills to interact with patients, fellow healthcare professionals, and supervisors. Effective communication plays a very important role in developing and sustaining a culture of safety in hospitals. For a health professional to be successful in delivering care and ensuring safety, the professional's communication skills must be clear to connect with patients and other members of the multidisciplinary team to prevent errors and improve health care delivery to patients. Effective communication in the clinical environment is essential for quality patient care and an indispensable ingredient of teamwork [15]. An assertive person according to Marshall, does not get intimidated by the environment the individual works but is rather able to speak up boldly with respect and non-aggressive manner. Assertive behavior is a catalyst for ensuring an atmosphere of patient safety [16].

Educational institutions and clinical supervisors play a significant role in developing assertive communication skills among student radiographers through training and feedback [17]. These efforts contribute to students' personal growth and readiness for professional practice [18]. Student radiographers may face challenges in communicating assertively due to hierarchical structures, unfamiliarity with clinical settings, or lack of confidence in their skills. Poor communication can lead to misunderstandings, errors in patient care, and compromised safety. It can also affect the overall patient experience and satisfaction. Understanding how assertive communication is taught and practiced during clinical rotations is essential for refining educational strategies and improving learning outcomes.

Developing assertive communication skills is crucial for the professional growth of student radiographers, enabling them to collaborate effectively with multidisciplinary teams and advocate for patient needs [19].

Therefore, the aim of this study is to investigate the development, practice, and impact of assertive communication skills among final year student radiographers during their clinical rotations. It seeks to explore the challenges students encounter in assertively communicating within healthcare teams and with patients, as well as to identify effective strategies for enhancing assertive communication competence.

In conclusion, most of the respondents are not very likely to speak up but instead, they prefer to do it non-verbally. If students are to speak up in the face of patient compromises, they will do so before any harm is done but tension or nervousness and the attitude of the clinician seems to be

the factors affecting their assertiveness.

Materials and Methods

Study Design

This study was a quantitative descriptive design in a form of a survey among final year radiography students of The Radiography Department of College of Health Sciences, Nnamdi Azikiwe University because they attend their clinical rotations at the Radiology Department of Nnamdi Azikiwe University Teaching Hospital (NAUTH), a federal teaching hospital in Nnewi, Anambra state Nigeria.

Study Population

The study involved 216 final year radiography students of the department of Radiography, Nnamdi Azikiwe University.

Sampling Method

A non-probability, purposive and convenient sampling technique was used to select final year students.

Inclusion Criteria

Inclusion Criteria for this study will include;

1. Final year radiography student
2. Students who have had more clinical experience due to the numerous vocational trainings and several hours of clinical rotation practices.

Exclusion Criteria

The following category of NAU students will be excluded from the study:

1. Non-final year radiography students
2. Non-radiography students

Sample Size Estimation

Sample size was determined using Yaro Yemene formula (as adopted by [20])

$$n = \frac{N}{1+N(e)^2}$$

Where n= sample size

e= Acceptance error

1= constant

N= Population size

Where

N= 216

e= 0.05

$$\text{Sample size, } n = \frac{216}{1+216(0.05)^2}$$

n= 141

Research Instruments

Questionnaires adopted from a questionnaire in relation to assertive communication using a modified harm index score developed by Lyndon et al (2012) was administered to the students who gave their consent to the study. The questionnaire comprised four sections. Section A dealt with the demographics of the participants which included age, gender, marital status and current area of clinical rotation and section B involved questions about when people speak up. Section C involved questions about how people speak up, while section D addresses questions relating to

factors that influenced their assertiveness and impact on their learning. The questionnaire also included clinical scenarios.

Data Collection Procedure

Ethical approval was obtained from the Ethical Review committee of Faculty of Health Sciences and Technology, Nnamdi Azikiwe University Nnewi campus before the commencement of the study. The questionnaires were personally administered to the participants within a week after giving prospective respondents explanation on the aim of the study and how to complete it. This explanation was contained in an informed consent form stating the purpose of the study as well as assuring the participants of confidentiality and anonymity. This consent form was attached to the questionnaire.

Data Analysis

Data obtained from the study analysis was first audited and entered into the Statistical Package for Social Scientist (SPSS) version 21.0. Descriptive statistic of mean, standard deviation, proportion as well as frequencies were used to summarize the demographic data such as age, marital status and area of posting. Data on when to speak up, how to speak up and factors influencing assertiveness were presented in tables and graphs.

Results

Table 1. Socio-Demographic Data

Variables	Percent (%)	FREQUENCY (n)
AGE		
21-25	90.07%	136
26-30	3.97%	6
31 above	3.97%	6
16-20	1.99%	3
GENDER		
Male	52.98%	80
Female	47.02%	71
MARITAL STATUS		
Single	96.03%	145
Married	3.97%	6
CURRENT UNIT		
General Radiography	72.85%	110
Ultrasound	15.89%	24
CT	5.30%	8
Dental	1.99%	3
Mammography	1.99%	3
MRI	1.99%	3

Table 1, shows the sociodemographic data for the research on the development, practice and impact of assertive communication skills among the participants. The highest represented group are between 21-25 years indicating that most respondents are relatively young adults. The gender distribution shows that male account for 80 (52.9%) while females account for 71(47%) of the

entire population. In addition, most participants are single accounting for over 145(90%) of the population. The data reveals that out of the total respondents 110 (72.85%) were posted under General Radiography, Ultrasound 24(15.89%), CT 8(5.30%), while the rest only account for less than 10%. This shows that most of the participants came from General Radiography and Ultrasound respectively, while the rest were under represented.

Table 2. Descriptive Statistics Showing the Perception and Current Level of Assertive Communication Skills among Final Year Radiography Students.

Current Status	Variables	Percent (%)	Frequency
Assuming the radiologist didn't wash his hand before entering the room, how great is the potential for harm in this situation?	Very high	92.05%	139
	Very low	7.95%	12
Are you going to insist the radiologist wash his or her hands before proceeding with the examination?	Very high	58.28%	88
	Very low	41.72%	63
Assuming the other clinician is a radiographer. How likely are you to insist that the radiographer wash his or her hands?	Very high	64.90%	98
	Very low	35.10%	53
Assuming the other clinician is a student like yourself, how likely are you to insist the student wash his or her hands?	Very high	90.73%	137
	Very low	9.27%	14
At what time of the examination will you speak up your concerns?	Before the examination	66.89%	101
	After the Examination	25.17%	38
	During the examination	7.95%	12
If no action is taken, how great is the potential for harm in this situation?	Very high	64.90%	98
	Very low	35.10%	53
How likely are you to insist the radiographer give the patient a lead skirt before exposing?	Very unlikely	52.32%	79
	Very likely	47.68%	72
Are you going to decide not to question the radiographer but rather take one of the lead skirts for the patient to wear as a way sending a message across to the radiographer?	Very likely	51.66%	78
	Very unlikely	48.34%	73
Are you going to speak up to the hearing of other clinicians?	Very unlikely	66.23%	100

	Very likely	33.77%	51
Assuming you spoke to the radiographer about the lead skirt but he refused to give it to the patient how likely are you to step in and do the right thing.	Very unlikely	52.98%	80
	Very likely	47.02%	71

The above table shows the perception and current level of assertiveness communication skills among the participants. A significant number of the respondents 113 (92.05%) showed a strong belief in personal hygiene (washing of hands) before attending to a patient. Similarly to the perception on the potential harm of not following the normal operating guidelines, the majority of the respondent said that they would not hesitate to voice out their concerns and escalate the situation if any of the necessary procedures are not duly observed before operating on a patient (i.e. Lead skirt, washing of hands etc.). However, the data showed that many of the respondent would take extra steps to ensure that things a done appropriately.

Table 3. Challenges Faced by Students in Practicing Assertive Communication in Clinical Setting

Challenges	Responses	Percent (%)	Frequency
Do you feel tense or nervous when speaking your concern to people in higher authority?	Yes	56.95%	86
	No	43.05%	65
Do you feel uncomfortable to ask a question or make a suggestion in the presence of a patient?	No	51.66%	78
	Yes	48.34%	73
Do you feel comfortable asking a clinician whom you have heard is rude or appears hostile about an examination you want to have more insight on?	No	66.89%	101
	Yes	33.11%	50
Are you able to make constructive suggestions assertively when working with your own colleagues?	Yes	71.52%	108
	No	28.48%	43
Are you able to make suggestions when working with senior clinicians who appear to be easy going?	Yes	86.09%	130
	No	13.91%	21
Are you able to work well under supervision of outstanding radiographers?	Yes	88.08%	133
	No	11.92%	18

The table highlighted some of the barriers to assertive communication faced by participants. A significant number of the respondents feel tensed and nervous when communicating their concerns

to higher authorities. However, a greater number of the population admitted to be able to make suggestions when working with a senior clinician who appear to be easy going. In addition, most respondents find it very easy to make constructive suggestions assertively when working with their colleagues. The key take away from the above data include:

- Students are able to express themselves freely around their colleagues and easygoing senior clinicians.
- Majority of the students find it uncomfortable to express themselves around a patient.
- Students have hard time working with a rude or hostile senior clinician.
- Majority of the students indicated interest to working under the supervision of experts in the field.

Table 4. Experience of Students Regarding the Barriers and Impact of Assertive Communication on Patient Care and Professional Development

Barriers	Variables	Percent (%)	Frequency
Has your ability to speak up or not affected your clinical practice in any way?	Yes	58.28%	88
	No	41.72%	63
Do you sometime get confused with what you observed in the clinical practice and what was taught in class?	Yes	86.75%	131
	No	13.25%	20
If yes, does it affect you in during clinical examinations?	Yes	74.17%	112
	No	25.83%	39
Do you think speaking up will affect your future education in any way?	No	50.99%	77
	Yes	49.01%	74

The data shows that 88(58%) of the entire population indicated that their ability to communicate assertively has no correlation with performing their clinical practice effectively.

The non-synchronization of practical and theoretical course work is also another observed barrier to assertive communication among students. More often, majority of the students get confused trying to align themselves between the theoretical aspect of the course work and the clinical examination. However, 112 (74%) of the students who get confused with what they observed in the clinical practice and what was taught in class admitted that it affects them during clinical examinations. Finally, 77(50.99%) of the student population agreed to voicing out their concerns and seeking proper guidance, while 74(49.01%) of the population would prefer not to speak up. Further analysis will be needed to determine the particular factor/barrier to assertive communication among the 49.01% that do not agree to speak up their concerns?

Discussion

The study found that the majority of the respondents, were males. This high ratio is also reflected in the male: female ratio of students reading Radiography in Nnamdi Azikiwe university. This male dominance was also seen in a study by [21] where gender distribution among radiography students was male 55.5% and female 44.5%. No obvious reason has been reported about the under representation of or uptake of radiography by the female counterparts. This may also be attributed

to the fear of some females who might have been misinformed about the potential hazards of ionizing radiation which could affect them. Such individuals either leave the profession at an early age or do not work in the clinical area after school but rather opt for lecture.

Greater number of the respondents worked in the general radiography unit, with a limited number of respondents working in the other units with highly specialised equipment. This may be attributed to the limited number of the specialised imaging modalities hence more students being placed in the general radiography areas. Moreover, other factors could be attributed to broken down or unrepaired equipment.

Speaking up has been described as being able to assertively communicate in clinical situations that requires clinicians or students to take (immediate) action through questions or statement of opinion or information with appropriate persistence until their right thing is done to prevent error or harm from reaching the patient [22]. Rightfully, majority of the respondents reported that the potential for the radiologist to cause harm was high, more than half of the respondents said that the likelihood for them to speak up if it was a radiologist was very high, same if it was a radiographer and student. The findings of this study demonstrated that the majority of the respondents are very likely to speak up when the clinician is in a field or profession considered to be "more superior" than the profession they are training to join though substantiable amount are less likely especially with radiologist. This finding is different to studies done by [23, 24 and 25]. This could imply that there is a better relationship between these students and their superiors at Nnamdi Azikiwe university especially with their direct superiors if one considers that most are less likely to speak up with radiologist than other professionals as radiologist didn't undergo the same training as them. The minority that couldn't speak up could be as a result of differences in power hierarchy and authority gradient [26 and 27].

The participants reported that they will not question the radiographer if he does not give the patient a lead apron but rather provide a lead apron. This study showed that instead of students speaking up verbally, they prefer to do it the nonverbal way. From this study, one can argue that students are aware of their right to ask questions and make contributions during clinical rotations but how to go about it has been a problem [28]. Also, [29] believes that, a person who is assertive speaks up freely and makes an impact with his or her words without being disrespectful. However, this was not the case with the findings of the current study. We reported that if they were to speak up it was very unlikely to do so to the hearing of other clinicians. This demonstrates that if students are to speak up to address an error, they would not do so to attract the attention of every clinician which can tarnish the image of the clinician in question but will do so appropriately and not in a disrespectful manner; this is consistent with a study done by [29].

The study also identified that a good number of the participants knew the potential for harm was high if the patient was not given a lead skirt to wear. Only a were very likely to step in and do the right thing if the radiographer refused to listen to them. Our findings also demonstrate that students were unwilling to intervene in the face of patient safety compromises even though the potential for harm is high. This kind of attitude can lead to a similar situation identified in a previous study done by [30], who reported the case of David James who died of an intrathecal administration of vincristine, as a result of 'silence'. The junior doctor knew that vincristine should not be given intrathecally but failed to speak-up and to challenge the senior colleague. This is evidence of how the inability of clinicians to speak up especially student radiographers during clinical procedures can undermine patient safety leading to instant death in some cases [31 and 32].

The participants reported that they will speak up before the procedure started. This clearly shows that if students are to speak up in the face of patient, they should do so before any harm is done. This is similar to a work by [33] where 75% of the respondent were willing to speak up before the

procedure started.

This study showed that more than half of the participants reported that they felt tense or nervous when speaking their concern to people of higher authority. This proves that the majority felt nervous speaking their concerns to people of high authority. This could influence their assertiveness, which according to [32], a feeling of confidence and good experiences in the past for speaking up can enhance such behaviour. We also discovered that the participants were able to make suggestions when working with senior clinicians who are easy going. This shows that when senior colleagues are accommodating subordinates are able to speak up their concerns without any challenges. Almost all (88.08%) of the participants reported that they can work well under the supervision of outstanding radiographers. This indicates that students have no problem working with outstanding professionals. However, a good number of the students reported that they felt uncomfortable asking rude clinician about an examination. Therefore, the attitude of the clinician influences the probability of a student to speak up. This finding is consistent with previous works by [34] who argued that, teamwork and a personal relationship with members in the team influences the desire to speak up. The findings also correlated with the study done by [35] who found that the stance of a team leader can greatly influence speaking-up behaviour.

This study showed that their ability to speak up or not has affected their clinical practice. This concurs with a previous study by [33] where 29.2% reported that their inability to speak up has made them to conform to certain practices which are not considered standard in the field. The participants reported that they get confused when they observed what pertains in clinical practice and what has been taught in class. This is consistent with previous works done by [34]. It is also similar to a study done by [36]. Also, the majority of the participants reported that this affects their clinical examinations. This is consistent with a study done by [37]. This study also correlates with a study done by [38] concerning the nursing profession.

In regard to future education, the majority of our participants reported that speaking up will affect their future education positively. From this study one can argue that student believe speaking up can help improve their education.

Conclusion

In conclusion, majority of the students worked in the general radiography unit. most of the respondents are very likely to speak up when the clinician is in their field or profession and also not rude to them. Most also agreed that instead of speaking up verbally, they prefer to do it non-verbally. We also discovered that students are to speak up in the face of patient compromise, they will do so before any harm is done but tension or nervousness and the attitude of the clinician seems to be the factors affecting their assertiveness.

Recommendation

1. Heads of departments of educational institutions to be supportive in assertive communication.
2. Students should be encouraged to speak up verbally and stand up for their point of view.
3. Students should be made to know their course or profession is not inferior to other health professions especially medicine.

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