



# Attitude Towards Research Evidence Utilization in Radiography Practice

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**Abstract:** The advent of technological innovations into medical imaging has undoubtedly revolutionized the approach to patient care in radiological settings. Consequently, clinical imaging professionals must always strive to keep abreast with research evidence in order to keep approach to patient care relevant, current, result-oriented, appropriate and cost-effective. However, there is little information on how research evidence utilization (REU) is perceived and practiced by radiographers in Nigeria. As a result, this study aimed to gain a better understanding of the attitude and perceptions of radiographers to the use of research evidence in practice. A total of 40 licensed and practicing radiographers in both public and private hospitals in South-east Nigeria were surveyed using well-structured questionnaires. Data collected were statistically analyzed using Statistical Package for Social Sciences software (SPSS v. 17). The results of the evaluation of knowledge, interest and perception of respondents about research utilization shows that many respondents (75%) agree that radiographers should be involved in health research and that research utilization will improve patient outcomes (68%). Many (72%) disagree that radiographers don't engage in research activities but few of the respondents (32%) admit that radiographers utilize research evidence in practice. Majority of the respondents (74%) don't perceive lack of interest as a barrier to REU in radiography practice. Further results show that radiographers do not utilize research evidence due to poor knowledge of what constitutes quality evidence (68%), don't know how to implement it (72%) or limited by institutional/organizational factors (75%). However, most radiographers (78%) agree that addressing the issues raised in this research evaluation will encourage REU in radiography practice. These findings from this study suggest that the majority of radiographers hold favorable attitude and beliefs toward research utilization but exhibit poor implementation of research evidence in practice due to peculiar barriers. It is believed that addressing these challenges will ensure the effective REU in radiography practice. Radiographers are also encouraged to consider new resources aimed at facilitating best practice and guidelines. Policies, tailored to increase adherence to best imaging practice and ensure improved patient outcomes, should also be formulated at local, state and federal government levels.

**Keywords:** Research Utilization, Evidence, Evidence-Based Practice, Radiography

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## 1. Introduction

Medical imaging and radiation sciences is one of the most dynamic fields of medical science with many innovations updated nearly on a daily basis [1]. This influx of new technologies into medical imaging has undoubtedly revolutionized the approach to patient care in the radiology department [1]. Consequently, clinical imaging professionals must always strive to keep abreast with current trends while

continuously growing and expanding their clinical knowledge in order to keep approaches to patient care relevant, current, result-oriented, appropriate and cost-effective [2, 3]. To achieve these tailored goals, the importance of effective utilization of research evidence in radiography practice cannot be over-emphasized.

Research can be a search for answers to well-defined

questions or the quest for new knowledge, to establish facts, using a scientific method. In health care, the primary purpose of research is to discover, interpret, and develop methods and means to ensure a more effective health care delivery system which will ultimately translate to improved patient outcomes [3-5]. Research utilization is a concept that refers to the identification and application of knowledge from research sources to clinical practice [4]. Research evidence utilization (REU) constitutes a subset of evidence-based practice (EBP), which also includes the use of non-research sources of evidence (e.g., experience) [6]. The term EBP is also treated as a concept closely related to the use of research-based knowledge in practice, in this study. EBP aims at high-quality, safe, and cost-effective care based on the best available knowledge [7, 8, 9].

The implementation and subsequent use of research evidence in clinical practice are far from straightforward and have recurrently been reported as a difficult undertaking in many fields of health care, radiography and medical imaging inclusive [2, 3, 5-9]. The gap between research evidence and its translation to practice in the healthcare has been a focus of discussions in many healthcare organizations in the last decade [4-7, 9-11]. Ugwu *et al* revealed that the gap between research and practice is very obvious within the radiography profession [3]. Although it is evident that imaging professionals have an improved positive perception of REU [2], some recognized barriers to the effective utilization of research evidence include lack of time, inability to cope with 'information explosion', misconceptions about what constitutes quality evidence, lack of resources, threat to professional autonomy, and institutional factors and culture [2, 3, 5, 10-15]. However, there is little information on how REU is regarded and practiced by radiographers in the area under study. Consequently, this study aimed to gain a better understanding of the attitude and perceptions of radiographers to the use of research evidence in practice.

## 2. Methods

A total of 63 licensed and practicing radiographers from both public and private hospitals in South-east Nigeria were surveyed using well-structured questionnaires. The questionnaire was designed in line with the objectives of the study and sent to the respondents in their respective locations. Fifty-one questionnaires were returned and only 40 were completely filled and met the requirements for inclusion in this study. The distribution and collection of questionnaires lasted for two months. Data collected were statistically analyzed using Statistical Package for Social Sciences software (SPSS v. 17).

## 3. Result

The total number of 40 questionnaires adequately filled was analysed. The result shows that 57.5% of the respondents are males while 42.5% of the respondents are female. It also shows that 85% of the respondents are at the age range of 20 – 29 yrs while only 2.5% are above 49 yrs (Table 1).

**Table 1.** Distribution of Age/Gender of the Respondents.

Age	Sex		Total
	Male Freq (%)	Female Freq (%)	
20 - 29	18 (45.0)	16 (40.0)	34 (85.0)
30 - 39	1 (2.5)	1 (2.5)	2 (5.0)
40 - 49	3 (7.5)	-	3 (7.5)
Above 49	1 (2.5)	-	1 (2.5)
Total	23 (57.5)	17 (42.5)	40 (100.0)

Further analysis of the results shows that 85% of the respondents are Bachelor's degree holders while only 10% have Master's degree and none of the respondents are PhD holders. It also shows that 62.5% have below 5 years of working experience out of which 57.5% are B. Sc holders and also none of the respondents have up to 15 years of working experience (Table 2).

**Table 2.** Educational qualification/years of experience of respondents.

Years of experience	Educational qualification				Total
	DIR/DCR Freq (%)	B. Sc Freq (%)	M. Sc Freq (%)	PhD	Freq (%)
Below 5 years	2 (5.0)	23 (57.5)	-	-	23 (62.5)
5 - 10 yrs.	-	5 (12.5)	2 (5.0)	-	7 (17.5)
11 – 15 yrs.	-	6 (15.0)	2 (5.0)	-	8 (20.0)
Above 15 yrs.	-	-	-	-	-
Total	2 (5.0)	34 (85.0)	4 (10.0)	-	40 (100.0)

Table 2 Legends:

DIR/DCR: Diploma in Radiography/Diploma of College of Radiography

The results of the evaluation of knowledge, interest and perception of respondents about research utilization are shown in Table 4. A Likert scale was utilized to qualify the values of responses. The mean rating of 1 shows that the respondents strongly agree with the statement; 1.1 - 2, agree; 2.1 - 3, neither agree nor disagree; 3.1 - 4, disagree; and 4.1 - 5, the respondents strongly disagree.

Many respondents (75%) agree that radiographers should

be involved in health research and that research utilization will improve patient outcomes (68%). Majority (70%) also believe REU will help to improve practice while serving as one of the means of achieving advancement of radiography practice (68%). Many (72%) disagree that radiographers don't engage in research activities but a little few of the respondents (32%) admit that radiographers utilize research evidence in practice.

**Table 3.** Knowledge, Interest and Perception of Respondents about Research Utilization.

S/N	Item	Mean	Std. Deviation
1.	Radiographers should be involved in health research	1.75	1.960
2.	Research utilization will improve patient outcomes	1.82	1.554
3.	Advancement of radiography practice can be achieved through research utilization	1.68	1.997
4.	The implementation of research findings will help to improve practice	1.86	1.764
6.	Radiographers don't engage in research activities	3.90	1.955
8.	Radiographers utilize research evidence in practice	2.38	1.628

Factors affecting the respondents' perception of barriers to research utilization were assessed. Majority of the respondents (74%) don't perceive lack of interest as a barrier to REU in radiography practice. Further results show that radiographers do not utilize research evidence due to poor knowledge of what constitutes quality evidence (68%), don't

how to implement it (72%) or limited by institutional/organizational factors (75%). On other possible barriers to REU, nearly half of the respondents admitted to them. However, most radiographers (78%) agree that addressing the issues raised in this research evaluation will encourage REU in radiography practice.

**Table 4.** Factors Affecting Respondent's Perception and Barriers to Research Utilization.

S/N	Items	Mean	Std. Deviation
1.	Radiographers do not utilize research evidence in practice due to lack of interest	3.43	1.217
2.	Radiographers do not utilize research evidence in practice due to lack of time	2.13	1.362
3.	Radiographers do not utilize research evidence due to lack of access to research data.	2.83	1.394
4.	Radiographers do not utilize research evidence due to poor knowledge of what constitutes quality evidence	1.60	1.172
5.	Radiographers do not utilize research evidence because they don't know how to implement it	1.70	1.305
6.	Radiographers do not utilize research evidence because of scope of practice limitations	2.70	1.305
7.	Radiographers do not utilize research evidence in practice due to institutional/organizational limitations	1.75	1.127
8.	Addressing these barriers will encourage research utilization among radiographers	1.85	1.127

## 4. Discussion

The importance of REU cannot be over stressed in the dynamic field of medical imaging and radiation science [2]. In the present-day patient-centered approach to healthcare, REU is particularly indispensable in order to keep patient care relevant, current, result-oriented, appropriate and cost-effective [2-4]. This assertion particularly applies to resource-limited settings where the challenge is usually how to achieve the best possible patient outcome while maintaining cost-effectiveness at the same time [17]. This study attempted an understanding of the attitude and perceptions of radiographers to the use of research evidence in practice. Majority (85%) of the respondents are within the age range of 20-29 years and hold only first degree while 62.5% of the radiographers have work experience below 5 years of age; depicting a radiography workforce that comprises majorly of young and recent graduates. This is not unforeseen in the area evaluated because the Nigerian populace, like most Sub-Saharan nations, comprises mainly of individuals in their youthful age range [17].

Due to the lack of a generally-acceptable [5] and reliable model to measure REU in this setting [3], this study assessed factors known to affect REU in the vicinity studied [3]. Majority of the respondents exhibited knowledge, interest and positive perception of REU in radiography. There is also positive attitude toward the benefits and perceived improved outcome patient associated with REU. The generalized interest toward REU expressed by the respondents is not unconnected with the fact that most of them are university graduates and understands the benefits of REU in their

practice. There is also heightened perception of the possible impact of REU on the advancement and role extension within profession, if REU is genuinely implemented by radiographers on a national scale. However, the extent of REU in practice is relatively poor within the setting evaluated. Both Fink *et al* [11] and Ugwu *et al* [3] also revealed only a handful of professionals are currently involved in implementation of REU in practice.

Although majority of the respondents (74%) don't perceive lack of interest as a barrier to REU in radiography practice, several other factors which constitute barriers for the respondents were identified. Many of them do not utilize research evidence due to poor knowledge of what constitutes quality evidence (68%), don't know how to implement it (72%) or limited by institutional/organizational factors (75%). Lack of time and access to research data are perceived as barriers by nearly half of the respondents. Organizational barriers to REU are often perceived in the form of rigid imaging protocols and lack of support which create little or no room for imaging professionals to implement evidence-based guidelines in their approach to patient care. This bottleneck can be addressed by making provision for periodic review of imaging protocols in order to ensure that imaging practice is up-to-date and evidence-based. Lastly, most radiographers (78%) expressed the optimism that addressing the issues raised in this research evaluation will encourage REU in radiography practice.

This study uncovered a group of imaging professionals who are willing and enthusiastic to implement REU. This is not unexpected because most imaging professionals assessed are degree holders who have conducted a prior research work when they were in the universities and appreciate the

importance of research evidence in clinical practice. However, their willingness is met with numerous barriers which constitute roadblock to effective REU in their practice. Some of these barriers are inherent to their practice environment while others have recently metamorphosed. The challenges to effective implementation of REU in clinical settings are well-documented and this trend cuts across all fields of medical and health care practice [2, 3, 5-16]. Some obstacles have been reported to appear to be generalized regardless of location or health care profession [6, 7, 18] while others are specific to location or profession [3, 5]. Several solutions has been proffered in an attempt to enhance REU in clinical practice [4-8]. These include but not limited to continuous education of clinicians, provision of access to databases and the enactment of adequate health policies and guidelines to serve as benchmark for evidence-based practice [7, 8]. In the area studied, it has been suggested that the provision of enabling environment, access to research data bases, supportive organizational policies and continuous professional education in healthcare research aimed at the enhancement of REU in clinical settings for imaging professionals, will ensure the maximal return on benefits of effective REU [3].

## 5. Conclusion

The findings from this study suggest that the majority of radiographers hold favorable attitude and beliefs toward research utilization. However, there is poor utilization of research evidence in radiography practice. Although the professionals are willing to change this trend, there are numerous barriers that militate against the effective implementation of REU such as the poor knowledge of what constitutes quality evidence, how to implement REU, lack of enabling environment and institutional/organizational limitations. It is recommended that the challenges which counter REU should be addressed in order to pave way for the effective implementation of REU in clinical settings. Continuing professional developments (CPDs) programs tailored to educate radiographers on skills required for REU should be instituted. Radiographers are also encouraged to consider new resources aimed at facilitating best practice and guidelines. Policies, tailored to increase adherence to best imaging practice and ensure improved patient health outcomes, should also be formulated at local, state and federal government levels.

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