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Evidence based medical imaging practice in Nigeria: A paradigm or a placebo?

Anthony Chukwuka Ugwu [a], E. Udo Benjamin [a], M. Ifenatuora Jennifer [a], Erondu Okechukwu Felix [b,*]

[a] Department of Radiography and Radiological Sciences, Nnamdi Azikiwe University Nnewi Campus, Anambra State, Nigeria
[b] Department of Clinical Imaging, Image Diagnostics, Port-Harcourt, Nigeria

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Abstract *Background:* Any Medical imaging practice or education which is not based on current best evidence is unscientific and lacks the capability for sustainable quality and improvement. From literature search, there has not been any structured or empirical research to determine the knowledge attitudes and perceptions of radiographers to evidence based medical imaging in Nigeria.
Purpose: The purpose of this study was to assess the knowledge and attitudes towards the use of evidence based medical imaging among medical imaging scientists (radiographers) in south eastern Nigeria.
Methods: Quantitative research methods were employed. A questionnaire was sent to all radiographers working in hospitals in south eastern Nigeria for whom contact could be established ($n = 60$). The questionnaire included questions seeking information on radiographer's definition of EBMI, attendance at EBMI courses, beliefs regarding patients' willingness and capability to participate in EBMI and their perceived barriers to use of EBMI. Data analysis involved descriptive statistics and theme analysis of suggestions made by radiographers. SPSS (11.0) was used.
Results: Fifty out of the sixty questionnaires were returned. None of the respondents have ever attended an EBMI course, reads regularly or subscribes to a journal. 88% of respondents ticked the correct definition of EBMI. 62% of radiographers commented that EBMI is new to them. Analysis of barriers to the use of EBMI showed that no access to EBMI resources was the dominant barrier (36%). 15 (30%) of radiographers believe that 10% of patients can participate in EBMI, while 4 (8%) of radiographers believe that 100% of patients can participate. The majority of respondents (48%) believe that mass education of radiographers will improve the practice of EBMI.
Conclusions: We conclude that there is poor knowledge and attitude towards the use of EBMI by most radiographers (medical imaging scientists) in the south east Nigeria. Individual and organizational barriers to the use of evidence based medical imaging were identified. Mass

* Corresponding author. Tel.: +234 8023129893.
E-mail address: okerons@yahoo.com (E.O. Felix).

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education and better organizational platforms are needed to improve the practice of EBMI in Nigeria. A broad-based approach that integrates EBMI into practical clinical, teaching, administration and research domains is canvassed for Nigerian radiographers.

Introduction

The delivery of a safe, quality patient (medical imaging) care in a demanding and complex health care environment necessitates the use of research-based evidence in medical imaging (radiography) practice. The concept of systematically using research findings in medical practice, or evidence based medicine (EBM), was first expounded in the mid to late 1990s. EBM is defined as a conscientious, explicit and judicious use of current best evidence in making decisions regarding the care of individual patients[9]. Another definition also includes the "Integration of best research evidence with clinical experience and patient values"[4]. The evidence based approach to medical care has been recognized as a key competency issue for the doctor[14,8].

A lot of interest has also been generated in the area of evidence based medical imaging. Evidence based imaging is an important tool for the determination of which subjects should undergo diagnostic imaging and what imaging approach should be applied. Accordingly, evidence based imaging encompasses the formulation of a clinically relevant question, searching the medical literature, critically analyzing the data, summarizing the evidence, and applying the evidence to practice[3]. The practice of evidence based medical imaging (EBMI) should be geared towards improving patient care, health outcome, cost, and quality of life. Whereas evidence based nursing and evidence based medicine are common expository in literature [1,2,11], evidence based radiography remains under-reported. Only a few authors have dealt specifically on this subject such as [10,6]. Based on internet search, no article on evidence based medical imaging/radiography practice in Nigeria has been published.

The present study represents the first attempt to assess the attitudes of radiographers/imaging scientists towards EBMI in our environment.

Methods

The study was a cross-sectional survey of all the radiographers (imaging scientists) working in hospitals in the South East geophysical zone of Nigeria between March and May 2009. The questionnaire was a systematically developed, anonymized, self administered 15-item instrument which was adapted from that of a similar study of Saudi dentists [5]. The questionnaire assessed the following key points:

(1) Respondents socio-demographic data.
(2) Attendance at EBMI courses/definition of EBMI.
(3) Respondents belief as to whether they were practicing or using EBMI.
(4) Awareness of the components of EBMI.
(5) Beliefs regarding patient's ability to be involved in decision making.
(6) Beliefs regarding what could be done to improve EBMI.

The questionnaires were distributed to 60 radiographers (here in after imaging scientists). Data analysis was largely descriptive, with frequencies of response and percentages recorded. Respondents' belief on how EBMI could be improved was subjected to theme analysis. Data was analyzed using statistical package for social sciences (windows version 11.00).

Results

Fifty out of the 60 questionnaires were returned. Thirty-two (64.0%) of respondents were males, 13 (26.0%) females, 5 (10%) of respondents did not indicate their gender. Twenty (40%) of the respondents graduated between year 2000 and 2009, 5 (10%) did not indicate their year of graduation while the rest graduated before year 2000. Seven (14%) of the respondents have Diploma as their only qualification while 43 (86%) have B.Sc degree. None of the respondents has ever attended an EBMI course. On respondents' definition of EBMI, (62%)commented that EMBI is an academic issue which is new to them. Nevertheless, 44 (88%) of the respondents ticked the correct definition while 4(8%) ticked the wrong options and2 (4%) did not tick at all. Results with regard to respondents use of EBMI indicate that that 27(54%) unknowingly use EBMI in their clinical practice, 22 (44%) never used EBMI. 1 person (2%) did not tick any option. The responses about the key components of EBMI showed that 43 (80%) selected justification and optimization while 2(4%) did not. One respondent did not choose any of the options (yes/No). No respondent indicated regular reading or subscription to any journal.

Analysis of barriers to the use of EBMI showed that factors such as, No access to EBMI resources (36%) and threat to clinical freedom (18%) were the most cited. Some other responses include "It is research and not applicable" (10%), "it is not universally applicable" ranked 12%. 6 (12%) respondents did not tick at all.

On respondents' reactions if they discover that evidence contradicts clinical judgment, 4 (8%) agreed that they will discard the evidence, 40 (80%) will evaluate evidence while 1 (2%) is unsure of what to do.

On the applicability of EBMI to their culture, 7 (14%) of the respondents strongly agreed that it is applicable, 13 (26%) partially agreed, 12 (24%) disagreed, 15 (30%) strongly disagreed. 3 (6%) did not respond at all. With regards to patients' willingness to participate in EBMI, 12 (24%) of respondents strongly agreed that patients are willing, while 22 (44%) partially agreed, 15 (30%) disagreed, 0 (0%) strongly disagreed while 1 (2%) did not respond.

Responses to percentage of patients capable of participating in EBMI showed that 15 (30%) of respondents believe that 10% of patients can participate while 12 (24%) believe that 25% of patients can participate; 8 (16%) of respondents indicated that 75% of patients can participate while 4 (8%) of