



# **Experiences Of Evidence Based Practice Training And Implementation In Selected Universities And Hospitals In Tanzania: A Qualitative Study**

**\*Deodatus C. KAKOKO<sup>1</sup>; Edith A.M. TARIMO<sup>2</sup>, Edda Tandi LWOGA<sup>3</sup>, Gracian CHIMWAZA<sup>4</sup>, Blessing CHATAIRA-MAWIRE<sup>4</sup>**

<sup>1</sup>School of Public Health and Social Sciences, Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar Es Salaam, Tanzania

<sup>2</sup>School of Nursing, Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar Es Salaam, Tanzania

<sup>3</sup>Directorate of Library Services, Muhimbili University of Health and Allied Sciences, P.O. Box 65001, Dar Es Salaam, Tanzania

<sup>4</sup>Information, Training and Outreach Center for Africa, South Africa

\* E-mail of corresponding author: [knkuru@yahoo.com](mailto:knkuru@yahoo.com)

## **ABSTRACT**

Evidence based practice (EBP) has continuously been considered vital in health research, teaching and patients' care. The main objective of the paper was to describe benefits of EBP training and challenges of implementation in selected Universities and hospitals in Tanzania. We conducted three focus group discussions (FGDs) with 26 participants who had attended EBP training that included academic members of staff in universities, physicians, nurses and librarians. Data were analyzed using thematic content analysis. Participants reported that they benefitted from EBP training in terms of acquiring new knowledge as well as attainment of advanced professional skills. The training was also revealed to have been useful in areas of research, teaching and care of patients. Various challenges including; inadequate financial and material resources, technical and technological obstacles as well as negative attitude and disapproving mind-set were reported to hinder implementation of EBP. Overall, participants perceived EBP training to be a revelation in enhancing their use of information technology in teaching, research and care of patients. Besides, hospital and institutional administrations need to devise ways of mitigating challenges facing implementation of EBP.

**Key words:** evidence, health care, teaching, research

## **INTRODUCTION**

Evidence-based practice (EBP) refers to the conscious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients (Sackett et al., 1996). This approach helps clinicians understand whether a treatment will do more good than harm (Bindawas, 2013). For effective EBP, health providers need to pay attention to the best-available evidence gained from high-quality research resources that are both valid and ready for clinical application (Schwartz et al., 2003). For effective EBP, healthcare providers need to be competent in searching and using the best evidence from high-quality research resources.

While EBP principles are increasingly incorporated into curricula of health related Universities to enable students learn how to use the best available evidence (Sahapong et al., 2009), there has been little effort to

provide or use EBP knowledge and skills on the side of academic staff, librarians and other health professionals who are in service. For instance, a study in Tanzania showed that physicians at Muhimbili National Hospital (MNH) seek information from the formal sources, which included printed textbooks and journals (Norbert and Lwoga, 2012). Studies done in Uganda moreover reveal that Colleagues are the major source of medical information for health professionals (Tumwikirize et al., 2008; Kapiriri and Bondy, 2006).

EBP project was therefore launched by Information Training & Outreach Centre for Africa (ITOCA) through the directorate of library services at Muhimbili University of Health and Allied Sciences (MUHAS). It was deemed important for the project to conduct workshops to equip professionals with EBP related knowledge and skills which they can use in their daily practice. The workshop materials were updated by MUHAS librarians in collaboration with ITOCA trainers. The project conducted ten workshops on EBP to academicians, clinicians and other non-health care workers with the aim of improving the training, research and patient care services in Tanzania. Of the 10 workshops, seven were delivered through a combination of face-to-face and via a video conferencing facility, while three workshops were conducted through face to face. A total of 238 participants attended the ten workshops on EBP. Having accomplished the training, it was deemed important to get feedback from workshop participants who had applied the EBP skills and knowledge. Also, it was imperative to assess challenges and recommendations from participants' point of view in order to identify future needs. This paper describes the experiences of workshop participants in relation to EBP. Specifically, the paper describes the benefits of attending EBP training as well as the challenges in implementing aspects of EBP.

## **METHODS**

This was a descriptive qualitative study (Creswell, 2007) that was conducted at Sokoine University of Agriculture in Morogoro and Muhimbili University of Health and Allied Sciences in Dar es Salaam. These are largest and oldest Universities in Tanzania which hosted EBP workshops. The study focused on health professionals working in hospitals, Librarians and Academicians working in Academic Institutions as well as one Researcher working with a Research Institution. The institutions were Muhimbili University of Health and Allied Sciences (MUHAS), Muhimbili National Hospital (MNH), Sokoine University of Agriculture (SUA), Ifakara Health Institute (IHI), Aga Khan University (AKU), Law School of Tanzania (LST), Hubert Kairuki Memorial University (HKMU), Ministry of Health and Social Welfare (MoHSW), Tanzania Fisheries Research Institute (TAFIRI), University of Dar Es Salaam (UDSM), Mkwawa University College of Education (MUCE), Temeke Hospital and Yombo Health Centre in Tanzania. Participants were sampled purposively from all institutions that participated in the EBP workshops at MUHAS. Purposive sampling sought to involve information rich participants as they were the ones who attended EBP as well as its implementation.

Three Focus Group Discussions (FGDs) were conducted. FGDs were deemed appropriate because participants could discuss and share different views about the workshops as well as EBP implementation. Data was collected using a semi-structured FGD guide. Each focus group comprised of four to twelve participants. In data collection, the researchers applied the principle of bracketing to ensure that pre-understanding of information would not influence the data. As such, bracketing involves the researcher holding in ideas, presumptions, and personal understanding when listening to, interacting with and reflecting on the stories of informants in order not to influence the description of the phenomenon under study [9]. Furthermore, for enhancement of reliability, field notes as a reflective diary was maintained.

Thematic content approach was used to analyse data. Prior to the start of the analysis, the audio-recorded interviews were transcribed precisely word for word (verbatim), where non-verbal cues were also taken into account in the transcriptions. The analysis started with listening to audio-records, reading and re-reading of the transcripts, and extracting important statements from the transcripts. The transcripts were thereafter coded independently by two researchers. Categories were developed and the two researchers shared the analysis, discussed and agreed on constructed categories and the write up process. These categories were supported by sub-categories. Quotations were added to include the participants' voices in the report. The bracketing principal was observed throughout so as to guarantee trustworthiness of the

findings. Ethical approval was obtained from the Research and Publication Committee of Muhimbili University of Health and Allied Health Sciences (MUHAS).

**FINDINGS**

As presented in Table 1, majority of participants were working in Universities and were health care providers. Also, there were more female participants when compared to males.

**Table 1: Socio-demographic characteristics of study participants**

<b>Characteristic</b>	<b>FGD 1</b>	<b>FGD 2</b>	<b>FGD 3</b>	<b>All</b>
<b>Institution type</b>				
Research	0	2	0	<b>2</b>
University	4	7	4	<b>17</b>
Health Facility	6	3	0	<b>7</b>
<b>Sex of participant</b>				
Males	5	5	2	<b>12</b>
Females	5	7	2	<b>14</b>
<b>Professional field</b>				
Health Providers	4	5	2	<b>10</b>
Librarians	2	4	1	<b>7</b>
Academicians	4	2	1	<b>8</b>
Researchers	0	1	0	<b>1</b>

The study reveal the benefits of participating in EBP training and challenges of implementing EBP after the training.

**Perceived benefits of participating in EBP training**

Participants pointed out various benefits of EBP after attending the training. They described various benefits including; gaining knowledge and skills, advanced professional skills, and using opportunities to disseminate EBP information.

**Gaining knowledge from EBP**

Participants expressed knowledge gained from various components of the training such as searching of information, use of key words, use of specific databases, and conducting systematic review. They reported that they became aware of use of key words to search and obtain information they needed. One participant expressed positive feelings on the use of key words in searching for information:

*“It real makes me comfortable because before I didn’t know what the key words to search for are, I may know the problem, but how to search and get those appropriate obligations or whatever or scientific aspects, also appropriate papers or articles?”* (Participant 3, FGD 3).

Some participants went further to explain how EBP improved their information search skills including knowledge of searching E-resources in the internet. Also, following the training participants were able to narrow down the search query, for example, using Patient-Intervention-Comparison-Outcome (PICO)

Most participants stated that they gained knowledge on how to conduct systematic review during the training. They reported to have mastered and become more conversant in sorting the appropriate search engines or databases for a particular problem as narrated bellow:

*“It was very usefully especially on systematic review whereby I now know how to pull down different ideas from different literatures .... Through knowledge provided during the workshop, I became more conversant with sorting the appropriate search engines or database for a particular problem”* (Participant 6, FGD 1).

In addition, participants realized that EBP enhanced their knowledge on what information is important to the users of the Library. One Librarian shared how this knowledge improved his practice:

*“You know once I used to collect health information and upload into our digital library without even knowing which one is relevant to my users, so after that training, I have been able to look what kind of information is relevant to my users, what kind of information is coming from what kind of study, may be if this information is coming from clinical, fertile or household study “Before, I was not able to differentiate i.e. this is clinical or survey study” (Participant 1, FGD 2).*

#### **Attainment of advanced professional skills**

EBP workshops helped the participants in advancing their professional skills ranging from guiding customers, conducting research, supervising and teaching students, and providing care to clients. They reported that they used different papers in Cochrane, PubMed and HINARI to generate evidence which in turn improved their practice in various fields. Also they passed on the knowledge and skills to other people. Overall, they emphasized that their professional skills were improved after starting implementing the EBP. One Librarian said:

*“The workshop helped me to guide my library users to search and to filter their search because sometime they need to find the related articles, so by applying EBP related to our region say Africa, then we will manage to go to the more specific... I am now able to combine search terms better than before by applying PICO” (Participant 2, FGD 2)*

EBP training was reported to have improved research capability. The participants stated that they were able to master the research aspects as an outcome of the training they got. They emphasized that the prior knowledge they had acquired in research was not adequate:

*“I became more conversant with study designs. When I was studying this topic in class, the time was not enough, but when I came here for the training, I came across different people of whom I can interact on discussion about study design using different scenarios and at the end I became more conversant on this topic” (Participant 6, FGD 1).*

In relation to supervision, EBP was reported to be useful in improving the supervision of students. This was particularly through the knowledge they gained on how to prepare a concept note as an initial stage of developing a research proposal. They said the students enjoyed applying the knowledge especially when it came to research proposal writing and data collection, analysis and report writing. The knowledge of preparing concept note before developing the whole proposal was perceived as crucial step in helping the students to master searching for relevant literature. One participant echoed this by indicating that supervised students adhered to norms of data collection, data analysis and report writing.

*“From the students that I am supervising I am very sure that they did what I told them. As am guiding them what to do especially on how they are going to collect their qualitative data and how analyse and report the results. Also, the issue of merging the qualitative and quantitative data, the interface and whatever, that one I am sure they did because I am the one looking at their work” (Participant 4, FGD 3).*

EBP was further reported to be beneficial in improving teaching. This is particularly when it comes to preparation of Teaching-Learning materials or updating such materials. They stated that they used the skills obtained from the training to periodically find most recent and relevant teaching materials.

Overall they perceived EBP training as a great contribution in teaching process. They said it capacitated them to be able to teach the students in class as well. Some of participants explained that having gained knowledge on how to search scholarly information they also managed to teach their students how to search information from databases.

*“In terms of teaching, students were not aware of other search engines and other database. They were using Google only when searching for academic materials, but after I came to know these evidence based databases, I came back and taught my students and now students have stopped depending on Google only instead they use other database as well” (Participant 2, FGD 1).*

Consequently, after the training the participants stated that they used EBP to improve care of patients and clients including enhanced follow-up. One participant said:

*“I am a Nurse; the training helped me as of now am able to make follow up of pregnant women from the day they start the clinic up to time of delivery and until a child is five years old”* (Participant 1, FGD 3).

They said that by using EBP it became easy to communicate with patients and clients. This was evidenced by improved contact between the provider and the patient/client. They realized that their power of communication significantly minimized missed clinic follow up visits. Thus they were able to keep in touch with their clients even when the clients travelled up country. In such, they managed to re-schedule the appointments and monitor the clients’ progress.

They realized that EBP was a resource in care of patients as it was useful in searching for information that addresses clinical challenges that some of clinicians may be facing:

*“...let say in case we face difficulties while attending our patients, in case there is something that we don’t understand it, normally we give each other assignment to go to different databases like Google Scholar and search for that thing then the other time we meet we discuss the findings and we come up with answers for the challenge we faced”* (Participant 1, FGD 3).

Other participant reported the usefulness of EBP by demonstrating its use in client education when it comes to health issues. They used the knowledge to educate pregnant HIV positive women about the importance of medical follow up for mothers and their children. The training contributed in searching for relevant information which was required to implement evidence based care practice.

*“EBH helped me a lot as I am now able to use EBH knowledge to improve patient caring. Example: “I got one case from female patient whereby I had to search about it through Pubmed and I got the treatment procedures of which I applied to her and I told the patient to come back after 30 days and when she came back, the problem was already solved”* (Participant 5, FGD 2).

### **Challenges in Implementing EBP**

Participants were asked to explain the challenges they faced in relation to EBP. Main challenges were technical/technological aspects, material and financial issues, attitude, perceptions and behaviour components, and practical drawbacks.

#### **Technical/Technological Obstacles:**

Some of participants pointed out low internet speed as a challenge to implementation of EBP, which hampers timely access to information. Apart from low internet speed, poor internet connectivity was also indicated as a challenge particularly in context of treatment at health facilities.

*“Apart from that, also there are no enough resources like internet connectivity in the working places like in the wards”* (Participant 7, FGD 1).

The low speed and poor connectivity of internet were coupled with the problem of power instability as well as low quality of computers as one of participants remarked.

*“In my institute I have some challenges like slow internet depending much on the modem from mobile company’s internet bundles, electricity as sometimes the electricity is there, sometimes there is no electricity (Unstable power) and we have only one computer which is working but not perfectly (not reliable)”* (Participant 9, FGD 2).

Implementation of EBP is further constrained by technological aspects. For instance, one of participants attested that it was not easy to access information from the soft copy materials in the drop box and that it could be easy to access information from hard copy documents.

*“For me my major challenge was; I put/left all the materials after the workshop as most of them were in the drop box, so most of the time had to go back and read and according to the nature of my work it was not so easy for me to do that. So the soft copy materials for me it was difficult to access them”* (Participant 4, FGD 3).

In order to mitigate the limitation of accessing materials through the drop box, the participant suggested that print materials such as a book would be useful for quick reference.

*“If there is a book somewhere on EBP please let me know, I will be able to buy it at any cost, because through that I will be able to read and make note from it as a book is a quick reference.”*

*You know a print book has its own value even if we have these resources and their easiness on use but print materials are still important for quick reference” (Participant 4, FGD 1).*

***Inadequate Material and Financial Resources:***

There were also challenges regarding material and financial resources. Accordingly, lack of funds was reported to be one of the limitations in enhancing implementation of EBP as some of study participants reported that they were unable to conduct training of EBP due to financial constraints. Lack of health care supplies and equipments for clinical care was revealed as another challenge.

*“No resources or materials to implement EBH knowledge when caring for patients. We know how to access evidence but we do have equipment or supplies such as drugs” (Participant 3, FGD 1).*

Another participant provided similar views in relation to challenges of equipments and supplies for medical care but also added that the problem of procurement procedures.

*“We normally search for evidence and get the materials and all the steps to follow but the challenge is lack of tools to use in attending a given patient as you the procurement procedures and other thing are limiting us” (Participant 5, FGD 1).*

Lack of computers was also pointed out as a challenge to EBP.

*“Computers is a big problem to undergraduate students especially those who do not have own computers cannot access materials” (Participant 2, FGD 1).*

***Attitudinal, Perceptual and Behavioural Disputes:***

Unfavourable attitude was another challenge. Most of persons who were expected to benefit from EBP were not willing to change their minds due to their unfavourable attitudes to advanced technology as one of study participants attested.

*“Attitude to the people is still a big challenge as most of them don’t want to change their mind and adopt EBH during patient care as they were born before computer generation” (Participant 5, FGD 2).*

Similar views were given in another group discussion.

*“Some people in the office seem not to be ready to adapt to the EBH concepts in their day to day activities of providing services to patients (Negative attitude of some doctors against EBH implementation)” (Participant 1, FGD 1).*

It was provided that some people were not willing to change their minds in relation to EBP. Students were given as an example of those who were ready to change their approach when doing research.

*“Also students don’t want to change their mind to adapt and implement the EBH skills when doing their research projects/thesis and dissertations. For example, I got two Master students who actually have the same characters, that when you tell a student to use a certain approach, that student won’t be ready to use that approach and instead will depend on what he/she knew before and not otherwise and what they want is just to finish studies and graduate” (Participant 1, FGD 1).*

Some of participants revealed that they felt inferior to educate their clients regarding EBP as they regarded their education to be lower compared to education of their clients.

*“In terms of training; we have a lot of postgraduate holders but they undermine our capacity in training to the point that we don’t get more users coming to the training or just for consultation on library issues. This is due to the nature of our institute, you know our institute contains many PhD and Masters Students, and according to my level of education; I feel myself inferior even in making any presentation to transfer knowledge (Participant 1, FGD 2).*

Contrary, it was realized that the perceived inferiority was more on the side of those who had comparatively low level of education.

*“Some scientists used to come to me and I was able to assist them, but due to my inferiority complexity I was not able to conduct training to others (some scientists came to me when they faced difficulties on different issues like how to search for literature. For example, yesterday they came to me when they were in the process of making a review, so they faced some obstacles on how to search information on neonatal health in developing countries. I helped them to search*

*the information using PubMed and other databases. So we went through all the procedures on searching such as the use of Boolean operator and finally we got what they wanted and they started to see my potentiality and appreciated” (Participant 1, FGD 2)*

Low response for training was also reported. This was particularly in context where those who had attended EBP at MUHAS strived to conduct training in their institutions. Despite such efforts, the turn-up for training was deemed low.

#### **Practical Limitations:**

Time was found to be a constraint that distressed implementation of EBP as people who got the training might be occupied with other duties.

*“I am busy sometimes I intend to have enough time to sit and search for different materials but I can’t because there are a lot of patients even if you want to learn something but you can’t because of insufficient time” (Participant 1, FGD 1).*

While the training was deemed beneficial, it was pointed out that the terminologies used were more medical. One of participants pointed out that even online application for training was composed of questions that were medical in nature and they needed epidemiological background. He said:

*“The first challenge started in the process of applying for the training to MUHAS as I was to register online and there was a pre test whereby most of the questions were real of Medical origin. They required someone with a good medical background at least a good epidemiologist to be able to answer those. It was a bit tricky but I said just let me complete it, then if they see that I don’t know much that will be one of the criteria for me to go for the training, so I did what I could” (Participant 2, FGD 3).*

Moreover, the duration of the training was deemed to be too short and it was recommended to increase training duration.

*“Duration (time allocated) was not enough for the content coverage and I therefore propose the workshop training to be conducted for one to for weeks” (Participant 10, FGD 1).*

Research background was another challenge. While training focused on both qualitative and quantitative information, some of the participants were of the opinion that they lacked competency in qualitative research.

*“Another challenge is that; I found myself that I real need training in some specific areas, one of it is on how to conduct a qualitative research so I real liked that lecture but the time was short so it was difficult for me to grasp the whole content, but I’m real interested on that as sometime I might be required to do a kind of a behavioural study so qualitative techniques of research are necessary for such a study. For real in this area of qualitative I I am not so conversant so I need the skills but quantitative am okay” (Participant 2, FGD 3).*

## **DISCUSSION**

The findings underscore the benefits and challenges of EBP workshops. Overall, the workshops were beneficial to the participants in terms of acquiring knowledge and attaining professional skills. Such benefits of EBP workshops fit well with Bloom’s taxonomies of educational objectives, where key components of training should include knowledge, skills and attitude. Our findings corroborate the findings of previous studies where EBP courses were reported to improve appraisal skills and knowledge (Young et al., 2014).

The narrated improvement in information searching after the workshops is encouraging. The fact that health professionals went back and straight away started to implement EBP using available resources implies that the knowledge and skills acquired from the workshops were highly demanded. Also, the use of opportunities such as seminars, clinical meetings, journal clubs and informal communication to disseminate EBP knowledge to others is worth noting. This kind of dissemination implies smooth, and user friendly mechanisms of taking everybody on board to benefit from EBP workshop materials.

In the present study, EBP workshop participants reported to have utilized the acquired knowledge and skills in three aspects namely; teaching, research and health care. Such findings imply that EBP training is

an efficient strategy for linking teaching, research and health care which constitute key functions of most health training institutions globally including Tanzanian Universities. For example, MUHAS, which hosted EBP workshops, stipulates clearly that its core functions are teaching, research, consultancy and services.

While we regarded the stumbling block of EBP implementation to be knowledge and skills among healthcare professionals, the findings revealed varied challenges for implementing EBP. The challenges included inaccessibility to financial and material resources, technical and technological aspects, unfavorable attitude, and disapproving mind-set.

Although the rapid development of internet technologies is considered to have increased access to information especially in healthcare, our study show poor access to internet as one of factors that impeded health professionals' successful information searching. As such, the low bandwidth coupled with poor supply of electricity pose huge challenges on access to online health information and evidence in Tanzania. Even in urban areas where there is considerable internet penetration, there is still low bandwidth which inhibits access to online information (Omary et al., 2010).

Lack of financial and material resources constituted additional challenges of implementing EBP. In most low income countries, Tanzania included, availability of financial and material resources is crucial in order to implement EBP. In context of EBP, resources are critically required for maintenance of internet connections and electronic devices as well as regular check-up and updating the systems.

Time constraint is another bottleneck for implementation of EBP particularly among health care providers implying that most of them may not be applying evidence in their daily practice. In turn, this will compromise quality of services to clients because of lack of decision based on current available evidence. This is evidenced by the results from a previous study among librarians which cited lack of time as the most frequent obstacles to supporting the practice of EBP (Pappas, 2008). The perceived negative attitude and disapproving mind-set in implementing EBP among professionals is worth noting. The negative attitude towards implementation of EBP may be attributed by lack of knowledge and skills among professionals. Thus, use of various methods of dissemination of EBP materials as portrayed by participants can minimize the negative attitude. A study that assessed the influence of a monthly Evidence-based practice (EBP) seminar series on academic staff knowledge, attitudes, and barriers regarding EBP practice revealed that academic staff members who attended at least one seminar were more likely to have a positive attitude regarding EBP (Bindawas, 2013). Despite some elements of resistance to the EBP implementation, EBP has been widely accepted and adopted (Chinnock, Siegfred and Clarke, 2005).

Although the EBP workshop participants came from various regions, only participants from two regions took part in the focus group discussions. Participants from up country could have different experiences given the scarcity of resources such as computers and internet at their work place. Nevertheless, the information obtained is rich enough to highlight the experiences of participants after the training.

## **CONCLUSIONS AND RECOMMENDATIONS**

The findings indicate that workshops on strengthening the EBP skills of health care professionals and other workers is timely and significant in improving training, research and patient care services in Tanzania. Besides, there is a need to mitigate highlighted challenges facing implementation of EBP. Moreover, EBP need to be sustained through integrating it in existing health care and training policies. Also, trained participants should become trainers of trainers at their work places to ensure wider dissemination EBP knowledge and skills. In addition, they should strive to use EBP in the daily patients'/clients' care. In addition, the academic institutions may consider including EBP in the existing curricula to enhance evidence based practice. Moreover, the health related institutions should focus on improving working environment, and creating local databases to allow user friendly/conducive settings to access to internet resources.

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