

Views Toward Teaching Critical Appraisal at Healthcare Settings

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1- ABSTRACT

Background: Evidence-based practice (EBP) is an approach that strength decision-making processes by integrating the best available evidence with clinical experience and the patient's values. Critical appraisal is a step of evidence- based practice that concerns evaluation of the validity, reliability, and applicability of scientific articles. It is important for healthcare professionals to learn about critical appraisal. The study aimed to assess the views of healthcare professionals toward teaching critical appraisal at healthcare settings and the appropriate teaching methods. **Method:** The study is a part of a Delphi design research study that was conducted for designing an education strategies guideline for teaching critical appraisal for healthcare professionals. This part is phenomenological study that was done through conducting interviews with healthcare professionals using a structured interview guide. Thematic analysis was executed following coding and analyzing content. The participants' views were analyzed and represented under themes. All discussions were written and preserved. **Results:** The study revealed that most of the participants believed that it is important to teach critical appraisal for healthcare professionals at their workplace, also they need to know more about steps of critical appraisal. Participants suggested interactive educational, and they mentioned blended learning as an effective strategy for teaching critical appraisal approach. **Conclusion:** This study concluded that most healthcare professionals support teaching critical appraisal at healthcare settings and they preferred participatory learning approach. **Recommendations:** The study recommended teaching critical appraisal to healthcare professionals in healthcare settings using participatory and interactive educational methods with clear objectives and simple content.

Keywords: Behavior to education, Clinical professionals, Learning strategies, Research evaluation.

2- Introduction:

Evidence based practice (EBP) is a systematic approach that is used to assist clinicians in decision making process. The EBP approach merges the best available evidence with clinical expertise and the patient's preferences. Healthcare professionals require to apply knowledge and skills that are based on the best available evidence to improve their practice. So, they should constantly strive to have adequate education about EBP approaches to improve their EBP competencies (Horntvedt, Nordsteien, Fermann, & Severinsson, 2018; Snibsoer, 2019).

Critical appraisal of research articles is a vital step of EBP. It is defined as a systematic approach to evaluate the research's conduction process to ensure the scientific paper's validity, applicability, and reliability in order to apply its findings in clinical setting (Odierna, White, Forsyth, & Bero, 2015, Nordheim, Gundersen, Espehaug, Guttersrud, & Flottorp, 2016).

An effective and powerful education system is needed to support healthcare professionals and facilitate acquiring EBP skills (Lehane et al., 2019). Teaching critical appraisal requires educational methods that encourage critical thinking and learners' participations, which can be

achieved by using learner-centered learning and participatory teaching approaches (Ahmadi, Baradaran, & Ahmadi, 2015; Ilic & Maloney, 2014; Nordheim et al., 2016; Young, Rohwer, Volmink, & Clarke, 2014). These educational approaches include journal clubs, workshops, small group discussions, electronic learning, self-directed learning, and lectures (Häggman-Laitila, Mattila, & Melender, 2016; Young et al., 2014).

Although many teaching strategies have been used in teaching critical appraisal in healthcare settings, still there are a lack of critical appraisal competencies among healthcare professional due to many barriers as lack of time, work-overload, and ineffective educational strategies, so it is recommended that the effective educational method should be conducted in accordance with learners' views and preferences (Alatawi, et al., 2020). Teaching the skills of EBP including critical appraisal is a new approach in healthcare practice field of the Egyptian society. Therefore, it is important to explore the views of healthcare professionals about this issue for the purpose of designing an effective curriculum in the future.

2.1 Aim: The study aimed to assess the views of healthcare professionals toward teaching critical appraisal at healthcare settings and the appropriate educational strategies.

3- Method

3.1 Design

The study is a part of a Delphi design research study that was conducted for designing an education strategies guideline for teaching critical appraisal for healthcare professionals. This part is phenomenological study that aims at exploring the views and preferences of healthcare professionals in relation to teaching critical appraisal to healthcare professionals in healthcare facilities.

3.2 Setting

Healthcare facilities that are affiliated to the main healthcare organizations in Mansoura District were included in the study. Those healthcare organizations that are affiliated to Mansoura University Hospitals, Ministry of Health and Population, and Health Insurance Organization. In addition to Faculty of Nursing, Mansoura university.

3.3 Participants

Healthcare professionals who have at least Bachelor's degree namely, nurses, doctors, pharmacist, physiotherapist and dentists were invited to participate in the study.

Inclusion criteria: Post graduate healthcare professionals with at least bachelor degree, healthcare educators and trainers, nurses, doctors, pharmacists, dentists, physiotherapist.

Exclusion criteria: Undergraduate healthcare students, none healthcare providers.

3.4 Technique and Sample Size

Disproportionate quota sampling technique was used to recruit participants for this study. Researchers divided the healthcare professionals into subgroups according to their occupations and selected a number from each subgroup. Researchers used judgmental sampling technique to select the multidisciplinary team that is composed of healthcare professionals who have previous experience in EBP and experts in EBP. The total number of participants were 60 healthcare professionals, and 15 expert groups involve educators/ trainers who are experts in teaching EBP.

Procedure

3.5 Data Collection

Data was collected through face to face, and online interviews with the participants by using a

structured interview guide. The guide included questions about demographic and occupational characteristics of the healthcare professionals to obtain data about age, gender, educational qualification, occupation, and training courses about EBP. The semi- interview guide included eight open ended questions about healthcare professionals' views and preferences about teaching critical appraisal. The structured interview guide was tested for its rigors and keeping on the principles of developing and conducting semi-structured interview.

Researchers sent invitations to participants via emails and their work mailbox. Researchers gave a brief explanation about the objective of the study. Interviews were conducted either online or face-to- face according to healthcare professionals' availability and preferences. Each interview consumed time ranged from 10 to 15 minutes.

3.6 Data Analysis

Descriptive statistical analysis was used for the demographic and occupational data by using Stand for Statistical Product and Service Solutions (SPSS) program version 20. Qualitative data was analyzed by thematic analysis, that was used to illustrate the collected data. The interview transcripts were analyzed to conclude the common themes, similarities, and/ or variations among the participants' views. Data were coded, identified under categories and subcategories, and organized together under common themes. To ensure the validity of the thematic analysis, the researchers met five times to review the findings to clarify the analysis in relation to the emerging categories and themes (Alhojailan, M.,I., 2012).

3.7 Ethical Considerations. The researcher obtained the ethical approval from research ethics committee of faculty of nursing, Mansoura university and obtained verbal consent from the participants. The researcher assured participants that their participation in the study was voluntary. They informed that the collected data will be treated anonymously, confidentially and used for the purpose of the study.

4- Results

Table (1) represents the demographic and occupational characteristics of study participants. Regarding age, most of participants aged < 40 years with a mean age 38.2 (5.41) years for experts, and 33.4 (6.04) years for healthcare professionals. Professional nurses constitute 80% of experts panel, 13.3% were physicians and 6.7% were pharmacists. All of them had previous training programs in EBP. While 65% of healthcare

professionals were professional nurses, 16.7 were physicians, 10% were pharmacists and 8.3% was physiotherapists, and 83.3% of them had previous training programs in EBP.

The views of the study participants related to teaching critical appraisal in healthcare settings are illustrated in two main themes (**Diagram 1**)

First theme: Importance and practicing critical appraisal in healthcare settings:

Importance of critical appraisal:

Most of healthcare professionals and participants indicated that teaching critical appraisal at healthcare organizations will improve knowledge of healthcare professionals, reducing the gap between knowledge and practice “...I believe that attending these sessions will increase my knowledge about critical appraisal process in general...”. Participants added that learning critical appraisal facilitates understanding of research process and application of research findings at clinical setting. In addition, participants believe that studying critical appraisal improves the clinical practice of healthcare professionals. “...attending sessions about critical appraisal, I expect improving clinical skills with the patients and healthcare professionals will intervene in scientific way for their patients...”, “...I think it will solve clinical problems correctly....”

Practicing of critical appraisal at healthcare settings:

Most of the participants found that providing effective education sessions about critical appraisal at healthcare settings will create the culture of using evidence- based practice. By conducting these education sessions at workplace will make application of critical appraisal a part of their daily clinical lives, “...I believe that if I got training about critical appraisal at the hospital, it will be easy for me to attend the sessions and apply what I have learned directly to my patients....”. They also suggested that increasing awareness toward the importance of using critical appraisal in healthcare settings will encourage healthcare professionals to adopt the idea of using it in their daily clinical lives. “... I don't know why I should use critical appraisal and how I could use it specially with this work overload...”, “....in my opinion, if I know that critical appraisal will benefits my patient, I think I will use it....”. While all of them mentioned that removing barriers that could face implementation of critical appraisal such as allocating time “...I don't have time to search for researches and analyses them, I have so many patients during the shift in addition to the

paperwork and reports...”. They mentioned that providing adequate internet and computers at workplace will facilitate the adoption of critical appraisal at their daily clinical practices “....we don't have a computer or internet access in our hospital....”. Also, they suggested that the stating policies will increase commitment of healthcare professionals to use critical appraisal in their daily clinical lives. “...in my point of view, if the administration of the hospital make using critical appraisal as mandatory in daily patient care, all healthcare providers will use it....”, “... I suggest stating a policy that make the healthcare providers are committed to use critical appraisal in their practice ...”.

Second theme: Teaching critical appraisal at healthcare settings:

Learning objectives and content

Most of the participants pointed out that the learning objectives should be clearly stated for the learners at the beginning of each teaching session. They believe that learners will be confused if they do not understand the purpose of the session. “...It will be much better if the educator states the objectives of the topic at the beginning of the session so, we will know the importance of attending this session”.... Others had responded “Objectives guide us to have a full understanding of the concepts to be discussed in each session”..... Also, some of the participants said that “...From my view, I expect to see at the beginning what will I learn in this course and what is the benefit for me if I attend the educational sessions in the form of enumerating the educational objectives of this course...”.

All participants in this study mentioned that the content of the educational courses should consider the learners' needs, “I think this course will include all I need to know about critical appraisal starting from identifying the problem and ending with using the evidence to solve it”. All participants mentioned that the content of the educational sessions should be written in a simple manner that conveys the information accurately and aligns with the needs and level of the target audience. “.... We prefer the content to be presented clearly, using language that is understandable and terminologies that are suited to the level of the target learners...”.

Educational strategies

All participants mentioned that educational strategies should be based on participatory and interactive learning process “...I will understand more if there are interaction

between me and the educator and I if I could participate in the session..”, “....I will be more engaged in the session if there are interesting games and assignments”, “...I prefer learning by doing, meaning that I like to practice what I have learned to understand it better and be able to apply it in my work...”. Online learning was one of the suggested educational strategies because it will overcome the time barrier “... I prefer online sessions more because of my work overload and lack of time to attend face to face sessions...”. Other participants found that blended learning will be more effective in teaching critical appraisal, “....It will be more effective if I had a combined sessions of face to face or online lectures, presentations for more participation, interactive assignments followed by evaluation....”.

Educational materials and resources

Most participants mentioned that illustrations through multimedia including diagrams, graphs, photos, audio, and video should be used to improve understanding of essential information. Participants suggested using flow charts and mind map forms to illustrate the contents. They found these illustration methods are helpful in simplifying and understanding the content. “...We do not prefer content in paragraph form, we need it in diagram or maps form”. *It's easier to memorize the information if present in mind map form or diagram, it is more simple, ...”*. “... In my opinion video is the only media that makes it possible to reproduce processes, or procedures the way they appear in real life, I want a real video explaining the steps of critical appraisal in details”. Participants specified other resources that will facilitate the learning process. The mentioned resources include the presence of specialized librarians will help in advising and retrieving reports from Databases. “.....there must be specialized librarians to assist me in finding the appropriate articles and scientific researches.....” . They also mentioned critical appraisal checklists should be available for practical training “...I think if we have the appropriate checklist for each type of study, it will be more helpful to perform critical appraisal....”. Access to scientific database at the work placement was another “...we need computers with internet to search the web for researches, also we need access to trusted database to find the relevant studies.....”

Evaluation methods

Most of participants indicated that effective education should include a variety of evaluation methods to ensure that information has been received by participants. Moreover, the majority of

participants agreed that incorporating evaluation elements such as a quiz after each course would enable them to retain the learned information and evaluate their achievement. “...If every session ended with one closed question as an MCQ question, I would be able to answer it and complete the next, but if you asked me to answer an open question, I would skip this question...”. However, a few participants reported that the evaluation methods that should be used is a project using evidence to generate an outcomes management plan for real-life clinical practice: “.... I preferred to be evaluated through a project to apply all what I have learned in the course”.

5- Discussion

Critical appraisal is an important part of EBP and decision-making process. It assists healthcare professionals in making *better* by understanding the strengths and weaknesses of the available evidence (**sharma, A., 2023**). Healthcare professionals should be eager to acquire the required knowledge and skills to make informed decisions regarding their patients care based on the best, valid and recent evidence. (**Rohwer et al., 2017**). Despite the values of applying EBP including critical appraisal in the delivery of appropriate healthcare process to the patients, its application still represents a major challenge to healthcare providers (**Lehane et al., 2019**).

The present study is concerned with exploring the views of HCP about teaching critical appraisal to healthcare professionals to ensure their acceptance regarding educational strategy. The results revealed that formal training in critical appraisal skills would help healthcare professionals in understanding the research studies validity, applicability, and reliability. Moreover, it assists them to find out how they should use the study results to improve the care of their patients. Three studies agreed confirmed that teaching critical appraisal enables healthcare professionals to weigh the risk- benefits of research findings which in turn leads to providing the best clinical care for the patients (**Horsley et al., 2011; Roudsari, 2019**).

Compliance with education principles is the core of a successful session. These principles start with stating clear objectives and relevant content to the learners' needs. In addition to clarity and simplicity of content illustration (**Schneiderhan et al., 2019**). The participants of the current study were conscious of these principles to be considered in teaching critical appraisal. Educational strategies are corner stone of any educational session. In teaching EBP and critical appraisal skills specifically, participatory learning approach is

highly recommended by many authors. Participatory learning approach provides interactive learning environment that promotes the achievement of the intended learning outcomes. Engagement of learners in the learning process enables them to gain entrenched practical experiences that in turn improve their professional skills (MAfugu, 2023; Lehane et al., 2019; Omollo, Nyakrura, & Mbalamula, 2017). The current study emphasized using participatory learning approach in teaching critical appraisal, because it requires active discussion for analyzing and solving problems. In addition, the present study recommended using of online approach that overcome time, work overload and long-distance barriers that hinder attending in-person sessions, (Zhao, Chen, & Lian, 2021; Regmi & Jones, 2020)

7- Conclusion

The study concluded that most of study participants assured that teaching of critical

appraisal at healthcare settings will strength the clinical skills of healthcare professionals. In general, they focused on the importance of interactive learner- centered approach. They mentioned that blended learning between in-person at their workplace and online sessions will overcome their occupational barriers.

8- Recommendations

Based on the findings of the study, it's recommended to provide effective educational critical appraisal sessions at healthcare settings as well as design educational guide for teaching critical appraisal at healthcare settings

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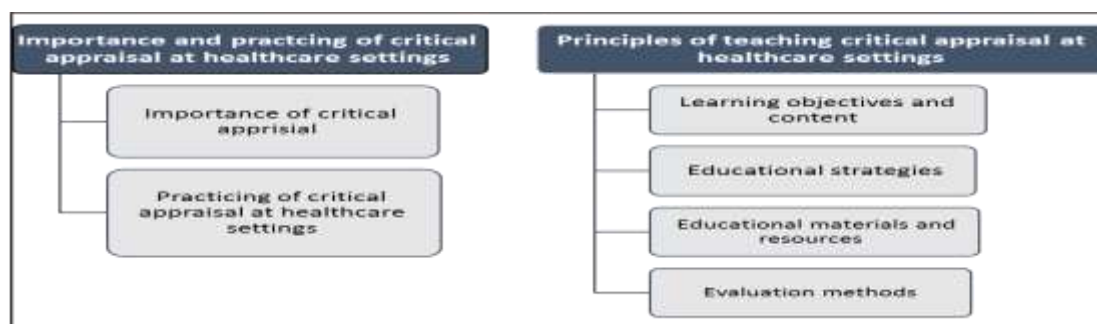
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Table 1. Participants' Demographic and Occupational Characteristics (n=75)

Item	Experts N= 15		Healthcare professionals n= 60	
	n	%	n	%
Age/ years				
<40	11	73.3	54	90
40 ≤	4	26.7	6	10.0
Mean (SD)	38.2 (5.41)		33.4 (6.04)	
Educational Qualification				
Bachelor	7	46.7	35	58.3
Master's degree	6	40.0	19	31.7
PhD degree	2	13.3	6	10
Occupation				
Professional Nurse	12	80.0	30	50
Physician	2	13.3	10	16.7
Pharmacist	1	6.7	6	10
Physiotherapist	0	0	5	8.3
EBP training				
Yes	15	100	50	83.3

Diagram 1. The Themes of the Views of the Study Participants Related to Teaching Critical Appraisal at Healthcare Settings.



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