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An assessment of training needs for accessing electronic resources among health professionals in Sri Lanka: a qualitative study

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Abstract

This study aimed to assess the training needs for accessing electronic resources among health professionals in Sri Lanka. Thirty two (32) postgraduate medical trainees from 32 medical specialties who were attached to the Postgraduate Institute of Medicine (PGIM) were selected as study population. Focus Group Discussions (FGDs) were used as the research instrument. Thirty two (32) trainees were divided into four groups; each group consisted of eight (08) participants. Data was analyzed by using QDA Miner lite open software. The major themes and sub themes were developed from the FGDs with postgraduate medical trainees. Results revealed that postgraduate trainees need information primarily for the purpose of research and publications (78.5% or 22). They also added that they need information for their clinical practices (60.7% or 17) during their PG education. Moreover, almost 100% of the trainees agreed that they need information for writing literature reviews. Majority of the respondents (89.3%) claimed that they search the internet to obtain the required information in view of enhancing and updating their medical knowledge. Most of the respondents (n=16) said that they prefer electronic journals and internet resources because they felt that electronic resources are more convenient and up to date. Further the importance of Evidence Based Medicine and the need for systematic reviews were highlighted at the FGDs. Regarding the format of

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sources 78% of them preferred to read electronic resources. All the trainees highly impressed that they need training on information literacy skills especially in searching techniques. Almost all trainees accepted that they need professional training in accessing electronic resources. In each group very few trainees (25%) had attended once or twice in the library orientations and hands on workshops on accessing electronic information which were conducted by the PGIM library. From the results of the FGDs, it is concluded that all trainees expect a high skill training programme during their postgraduate medical education. Therefore, this study recommends a well-organized training program including basic computer skills and searching techniques for medical postgraduate trainees

Keywords: Training needs, Postgraduate medical education, Information needs, Information seeking behavior

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Introduction

In any field, training encompasses the progress of allowing people with the required knowledge and skills to execute all their tasks. Therefore, sufficient knowledge of computer skills and internet searching skills are very essential for all users who are using electronic resources. Computer skills are essential in order to utilize computers and related technology efficiently. Internet searching skills differ from computer skills. Internet searching skill is a practice of using the internet for research or any other purpose. Ankrah and Atuase (2018) affirmed that "computer skills and literacy could be the main support for the effective use of electronic resources" and authors confirmed that training in strong information literacy skills is the basic requirement to make effective use of electronic resources by using electronic systems. These literacy skills are very important to locate, retrieve, organize, evaluate and apply information for academic work. Training in information literacy skills not only help in accessing electronic information, but also increase the confidence of users. A variety of studies confirmed that those with knowledge, search experience and training in computer skills are more likely to use electronic resources, and they also develop the students' progress in their studies. Habib, Asad and Bahadar (2022) concluded that lack of training or orientation in accessing electronic resources was one of the major barriers in accessing electronic resources by the students at medical college libraries in Multan division, Pakistan. Therefore, this study aimed to assess the training needs for accessing electronic resources among health professionals in Sri Lanka. The present era has been characterized by the dominant role of electronic information, and the use of electronic resources has been adopted by most of the higher education institutes in Sir Lanka.Where a very few studies have been conducted so far to assess the training needs to access electronic resources by medical professionals.

Postgraduate medical education is a large medical enterprise which inculcates thousands of medical faculties. Being the unique institute in postgraduate medical education, The Postgraduate Institute of Medicine (PGIM) provides services for postgraduate medical education in Sri Lanka. Hence, an immense effort has been made at the library to provide maximum

online services and save the time of the trainees. PGIM library is facing a gradual change from print environment to a digital environment. Therefore, it is imperative to assess the training needs for accessing electronic resources among health professionals in Sri Lanka.

Objectives of the study

- To identify the information needs of the PG medical trainees
- To assess the information searching behavior of PG medical trainees
- To assess the training needs of PG medical trainees
- To recommend the measures to enhance the training programs in order toimprove the information literacy of PG medical trainees in the electronicinformation environment.

Review of the Literature

Many studies investigated the training needs of medical professionals in accessing electronic resources worldwide. Technology cannot be unconnected from the medical profession, because it enhances the quality of medical education and the skills of medical professionals. Therefore, training in usage of electronic information resources is important, and should be executed. The major intention of this study is to assess the training needs and highlight some of the difficulties that medical postgraduate trainees experience in using electronic information resources.The health professionals who do not accept the new technologies and electronic access to information will definitely miss valuable information related to their study, research, and clinical work(Tella and Mutula, 2008).

According to Cobus (2008:34) “information literacy skills and competencies integrated into public health curricula through a collaborative partnership between public health educators and librarians can help integrate the institution’s core competencies and improve public health education”.

Many authors revealed that those with knowledge, search experience and training on computer skills are more likely to use electronic resources and also contributed to the development of the students’ progress in their studies (Bowden, Kromer and Tobia, 1994; Curtis, Weller and Hurd, 1997; Chu and

Lu, 2005; Renwick, 2005; Achonna, 2008; Dange, 2010; Okello- Obura, 2010; Gatero,2010 ; Khan and Shafique, 2011; Batti and Javed, 2014). In a similar study, Anyaoku (2015) concluded that the respondents are willing to take part in training on library usage and information search skills. Vishnu (2016), Andrews et al., (2005) revealed from their studies that majority of the respondents frequently use print resources when compared to electronic resources. This may be due to lack of IT skills of lack of instrument or their personal interest.

Research Methodology

This study used a qualitative research method. The sample size of the Focus Group Discussion (FGD) was advocated by Barbour (2007) that in social science research a maximum of eight participants per group for a number of reasons. Hennink, Kaiser, and Weber, (2019) concluded from their study that while four focus groups were sufficient to identify the majority of issues across the data, more data was needed to fully understand the issues. Therefore, population for the focus group discussions was a minimum of 32 postgraduate medical trainees. To ensure maximum diversity of participants that trainees from all 32 different MD programmes were included. It is sometimes difficult for various reasons to gain contact to the individuals one intends to interview within a limited time frame. Some may be busy, others may lack interest, and others may not be reached for a group of other reasons.They were divided into four groups. FGDs were conducted at the Postgraduate Institute of Medicine in English medium. Each FGDs was conducted for 45 – 50 minutes. Data collected from the qualitative study were analyzed by the thematic approach. Thematic analysis is one of the principal techniques used in descriptive qualitative research (Nowell et al., 2017). Braun and Clarke (2006) defined the term thematic analysis as "a method of identifying, analyzing and reporting patterns within the data; it is widely used and interprets various aspects of the research topic". They proposed a six-step approach to thematic analysis.

Six step approach to thematic analysis involves:
Step 1: familiarization with the data
Step 2: Generating initial codes

Step 3: Searching for themes
Step 4: Reviewing themes
Step 5: Defining themes
Step 6: Writing up

This approach to thematic analysis was adopted in the present study (Braun and Clarke, 2006). The audio-recorded FGDs were transcribed verbatim. The transcribed data were reviewed again and again while listening to the recording, corrected and anonymized. Familiarity and a bigger picture of the data were obtained by compiling summaries and it was very useful to make notes. (Step-1). The data were organized in a systematic way. A list of codes was compiled based on the study objectives, the literature and the data (in vivo codes) (Step - 2). A theme is characterized by its significance. Therefore, codes were examined again and some of them clearly fitted together in to sub themes and themes. For example, there were several codes related to the perceptions of information seeking behavior (Usage of internet, preference of format). All codes were collated to subthemes and then a broader theme. Similarly, other codes were organized into subthemes and then broader themes with consideration to the research objectives (Step - 3). The focus group transcripts were uploaded to the QDA Miner Lite (Version 6) qualitative software and coded based on the final list of codes. At this point data which are relevant to each code under each theme were gathered together using QDA Miner Lite. The themes which were identified in the previous step were reviewed and modified. (Step - 4). As a final refinement, it was aimed to identify the essence of each theme and what are the sub themes? How do the sub themes interact with main themes? (Step - 5). Finally, the report was prepared based on the main themes and sub themes. (Step - 6)

During the FGDs, in few occasions (especially in relation to electronic resources and training needs) the questions were extended to gain clear understanding of the issue. In addition,some questions were slightly modified during the focus group discussions.

Data Analysis

Demographic details

Among the four FGDs held, the first two groups were conducted with eight participants each and remaining two with six participants each. Four participants were absent. Two participants in each of the latter two groups were absent. Hence, the total number of participants in FGDs reached up to 28.There were 19 males and 9 females who participated in these focus group discussions. The respondents were in the age group of 28 - 49 years. Moreover, among the 32 Doctor of Medicine(MD) medical specialty programs conducted in the year of 2014 and 2015 at the PGIM, trainees from 28 medical specialties participated in these FGDs.

Work experience

With regard to work experience, participants' service period was calculated since qualifying with an MBBS. 50% (14) of the trainees had 6-10 years working experience 35.8% (10) of them had 11-15years experience and 14.2% (4) of them had more than 16 years' experience.

Information needs

All respondents claimed that they need information primarily for the purpose of research and publications (78.5% or 22). They also added that they need information for their clinical practices (60.7% or 17) during their PG education, their information needs change from time to time; electronic resources are used by them at different stages of research. In the FGDs, 90% (n = 25) of the trainees said that they need information for proposal writing. The same percentage of trainees (90%, n = 25) declared that they need information to identify the research topics. Moreover almost 100% of the trainees agreed that they need information for writing literature reviews. During their MD postgraduate medical education, postgraduate medical trainees have to submit a research proposal in the first or second year. Therefore, initially they require information for the selection of a research topic and writing research proposals.

Information searching behavior

Internet usage

Using the Internet for various purposes such as accessing electronic resources, checking e-mails, recreation, etc., was reported by all the respondents.

Trainee from Group one (GP/1/MD/Cli.Onco), stated that,

"*Internet is one of the basic components in our life. We use internet for multiple purposes. In the medical field it is a mile stone. Not only for reading books and articles but for accessing our immediate information needs…... such as clinical guidelines, video journals, video clips of major surgeries".*

Place of access

At the focus Group discussions, respondents were asked about the place where they access electronic resources. Results revealed that 57.14% (n=16) of the participants visit the PGIM main library and Ministry of Health library most frequently. More than 90 % (n=25) of the respondents said that except for subscribed resources, other resources are accessed from home. Furthermore,12 of them said that they use WHO library to access electronic resources.

Preferred sources of information

A variety of information resources are available at the PGIM library for postgraduate medical education; namely, online journals, internet resources, printed books, printed journals, theses and dissertations (submitted by postgraduate medical trainees), WHO collection, HINARI and digital repositories of universities and other institutions.At the FGDs, respondents were asked to indicate their preferred information sources, which satisfy the needs of their postgraduate medical education. Most of the respondents (n=16) said that they prefer the electronic journals and internet resources because they felt that electronic resources are more convenient and up to date.

*"We some postgraduate trainees made some collaborative efforts to access some reputed databases; such as Up to- date, surgical score, Cambridge core, BMJ collection etc. Some medical textbooks also we purchased from Amazon. We use text books which are listed in our course prospectors. WHO websites have more resources for medical administration and community medicine" (*GP/1/MD/Eme.Med).

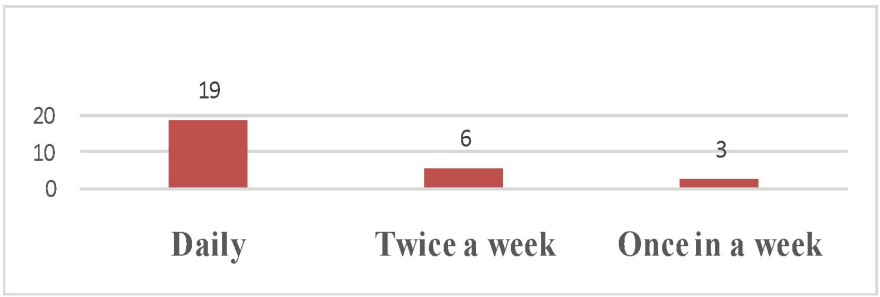
Preferred format

At the focus Group discussions MD postgraduate medical trainees were requested for their preference of format, print or electronic. Among them 71% (n=06) trainees preferred print only, 12 of them claimed electronic only and 10 of them claimed both print and electronic. Regarding this preference the statements given by the trainees are stated below.

Participant from GP 1. (GP/1/MD/Med Adm) said that,

"I feel more convenient in using electronic resources, because all the information is up-to-date..... In our medical field evidence-based medicine is the best practice. I mostly access all guidelines from our Royal college websites and other countries' medical associations. At this library all print books are very old editions, but all new editions we can access in the internet"

Frequency of accessing electronic resources



However, it is observed that 67.8 % (n=19) of the participants access the electronic resources daily, while 21.4% (6) are accessing twice a week and 10.7% (3) are accessing once in a week

Computer literacy and internet searching skills

Communication technologies have empowered individuals to handle information processing effectively with greater speed and accuracy regardless of the time and distance. Trainees stated some important comments regarding computer literacy and internet searching skills. One of the trainees from Group 3(GP/3/MD/Med.Mic) stated that,

"*I know how power on the computer and how to search internet but I have no idea about the techniques used to get the relevant information or to narrow down the search to get the most relevant information, therefore I highly recommend to organize training programs throughout our PG medical education"*.

One trainee from Group 4 (GP/4/MD/Otolaryn) explained,

"I have no idea about the search engines, Google scholar, repositories…. I only know about the Google page and to search information from that page…, but I am willing learn the search strategies, because without internet searching skills we can't survive in this electronic era".

Inadequate skill on accessing electronic resources is a significant issue mentioned by more than 90% of the respondents. Even though some of them had received orientation on accessing electronic resources, majority of the participants articulated their need for training. In order to develop their information literacy skills, they all requested training programs.

Training need

The trainees were asked about the training needs which are essential for accessing and using electronic resources efficiently. Almost all trainees accepted that they need professional training in accessing electronic resources. In each group very few trainees (07) had attended once or twice for the library orientations and hands on workshops on accessing electronic information which were conducted by the PGIM library.

All trainees expect a high skill training programme during their postgraduate medical education. Some of them requested some basic programs such as MS office, reference software. etc., but most of them requested the searching

skills and accessing databases, accessing repositories, accessing systematic reviews, keyword searching, Boolean searching, how to use medical subject headings (MESH) and advanced searching. In the PGIM library, orientation programmes are organized for few specialties such as Medical Administration, Community Medicine, Community Dentistry Microbiology and few specialties based on the request of the boards. Occasionally workshops on electronic resources are conducted with the support of HELLIS network and PGIM administration.
Suggestions regarding the training need are summarized below.

"I have never attended a training on how to access electronic resources" (GP/1/MD/Eme.Med).

"My friend said that they had a formal training on using keywords for accessing medical electronic resources, but I missed that chance" (GP/1/MD/Cli.onco)

*"I don't have any skills on searching literature so I always request library staff to get relevant articles" (*GP/1/MD/Med Adm).

The suggestions given by the trainees who have attended the orientation or workshops on accessing information are given below.

"*We have attended only one orientation at the inauguration of our course and one more workshop; in those events only the preliminary searching techniques were taught by the staff. If they conduct such kind of workshops at least three or four times during our course it would be better"* (GP/3/MD/Med.Mic).

*"At the workshop we were trained to use MESH subject headings to search articles from PUBMED. Other than that advanced searching, author wise searching and some more techniques were introduced. They were very useful for us because time is a big problem for us. If we have this kind of experience, we can submit a good research work" (*GP/4/MD/OMF Sur).

This was added by another trainee(GP/3/MD/Med),

"At the one of the workshops some medical related databases were introduced. We have very limited knowledge about medical databases. Therefore, time to time we should be updated with the latest and relevant resources"

Few respondents said that they felt confused, frustrated and disappointed when they did not find the relevant sources on their subject specialties. Some of the respondents said that they don't know where to start the search when an information need arises on particular topic.
GP 4, (GP/4/MD/Obs & Gyn) said that,

"*We need proper training and strong electronic information literacy training. Because we know how to switch on the computer and how to open the Google bar. Also, to access some databases but when we search for articles, we need some special techniques to access most relevant sources. At the very first day of our course there was an orientation. At this orientation some techniques were taught by the librarian to narrow down the search by using author's name, Journal title and some affiliations. So that kind of training would be most useful".*

90% of the respondents suggested that they need frequent and strong information literacy training during their postgraduate medical education period. One of the trainees from group four (GP/4/MD/Pedia) said,

"I*f we are able to access more resources, we can do more research work and our output also more".*

Another trainee from group three (GP/3/MD/Med.Mic) said that,

"T*he mind of each and every postgraduate trainee are now moving towards the technology era; this is obvious; Therefore, I would say that all trainees and trainers should be connected with this era themselves or by force. If we are not working towards this we are left behind the new electronic environment; So, there is a need to enhance the PG trainee's information literacy skills to use and get the maximum benefit of the latest developments*

in this digital era. Therefore, we need proper training in all aspects of electronic information literacy."

Results and discussion

The internet is a rich, complex and multi-layered dynamic textual environment that provides numerous forecasts for academic societies. Medical professionals must be able to recognize and use trustworthy health care–information sources from the Internet and other relevant sources of electronic information to make good clinical decisions and to follow the postgraduate studies. In this study, almost all the respondents (99%) indicated that they have used internet for their information needs.The maximum usage of internet by medical professionals was reported by several authors (Korjonen-Close, 2005; Mikalef, Kourouthanassis and Admantia, 2017). Further Bhatti and Javed (2014), confirmed that large numbers of the medical post graduate students use the internet always for education purpose, research purpose and to gain up to date information.

MD Postgraduate medical trainees use several libraries such as PGIM main library, PGIM branch library in Kandy, hospital libraries, medical faculty libraries and home for accessing electronic resources. At the FGDs majority of the trainees (90%) said that they access electronic resources from home. Vishnu (2016) revealed that the majority of the oncologists in Kerala, India using medical libraries for their research and academic activities.

The results obtained from the present study are supported by similar studies conducted elsewhere in the world. Even in the developed countries such as United Kingdom it was revealed that the usage of electronic resources was ranked as second preference and printed sources were ranked as first preference by family doctors (Bryant, 2004). According to the study by Vishnu (2016) 74% of the oncologists in Kerala, India preferred to read the print format and only 26% of the oncologists preferred to read electronic version on the screen. The results of the study by Vishnu (2016) clearly revealed the dominance of print format over the electronic format even in the digital era. More frequent use of print resources compared to online resources was reported by Andrews et al., (2005).

The results on the training needs revealed that majority of the respondents accepted that proper training would improve the PG trainee's performance. More than 90% of them stated that they need training on accessing electronic resources. Postgraduate trainees believe that training on electronic information literacy skills will improve their confidence in postgraduate medical education and will enhance their research output.

Many authors revealed that those with knowledge, search experience and training on computer skills are more likely to use electronic resources and also contributed to the development of the students' progress in their studies. (Khan and Shafique, 2011; Batti and Javed, 2014). In a similar study, Anyaoku (2015) concluded that the respondents are willing to take part in training on library usage and information search skills. The results of the present study are highly supported by Tella and Mutula (2008) that students with advanced computer literacy are motivated to access and make use of e-resources readily; therefore, it could be assumed that postgraduate students with limited computer skills may have difficulties in conducting effective and efficient research of information for their academic purposes. As per the discussion at FGDs the respondents are willing to take part in training on library usage and information search skills. Also, the orientations, awareness programs and user education programs were highly stressed by the PG medical trainees.

Conclusion

The study on training needs for accessing electronic resources was conducted at the Postgraduate Institute of Medicine with the purpose of assessing the training needs among medical postgraduate trainees. It also aimed to accentuate the importance of information literacy skills as an integral part of postgraduate medical education, and the fact that skills in working electronic resources are crucial to health professionals. Primarily, the major objective of this study was to assess whether the medical postgraduate trainees lack the computer skills needed in order to search for health information for themselves. Secondly, the aim was to recommend training programmes that could be followed by the postgraduate institute of medicine in training academics. The research findings have supported in making the following informed recommendations, based on the objectives of the study.

Recommendations

- More focused training that addresses the searching techniques is recommended. Thiswould give postgraduate trainees a chance to become acquainted with all searchingtechniques.
- The findings of this study revealed that all medical postgraduate trainees have some specific training needs.It is highly recommended that a training needs analysis be
- Conducted before the actual training. This would help the librarian to offer trainingrelated to the needs of postgraduate medical trainees.
- The Postgraduate institute of Medicine should introduce regular training for newly recruited Postgraduate trainees, and dedicate them frequently.
- There should be a compulsory training module with the postgraduate medical curriculam which will encourage all trainees to participate in all training modules.

Recommendations for future research

- This study was focused to assess the training needs of health professionals in Sri Lanka. The sample population of the present study included the trainees of MD program only and further studies should be conducted covering all postgraduate medical trainees in M. Sc., Diploma and Certificate Courses of PGIM.
- Studies should be conducted to evaluate the research output and the usage of electronic resources in order to evaluate the training needs.
- Research studies on Citation analysis in theses and dissertations submitted to PGIM in all specialties should be conducted to evaluate the usage and the training needs of PG medical trainees.

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