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The Major Obstacles in the Development the Role of Radiologic Technologist in Sudan

Awad Elkhadir[1*] and Ibrahim A. Awad[1]

[1]Department of Diagnostic Radiology, Faculty of Applied Medical Sciences (FAMS), King Abdulaziz University, Jeddah, Saudi Arabia.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

This research study sets the objective to find out the most important obstacles which hinder the development of the role of the radiologic technologist (RT) in Sudan. It also aims to highlight the results and recommendations in the hope of finding the deserved attention of decision-makers in this field in order to develop the role of RT and consequently improve health-care services in Sudan. To accomplish such an objective, a group of RTs in Sudan was selected randomly. Then these subjects were surveyed and directly interviewed whereby, they were asked to answer an open-ended question. A brief cross-sectional survey was also done by a total of 139 RTs. When the data was collected, the percentage of males was 63.3% while the percentage of females was 36.7%. Results showed that the number of subjects who believed that there was more than one obstacle is 83%. The number of those, who feel that the work environment and the lack of protection from radiation are to blame, amounts to12%. However, the percentage of those who think that factors such as Job description , limitation of post graduate studies, lack of conferences and inability to attend international scientific meetings due to lack of funding, have negatively impacted the development of RT is 12%. Others pointed to the following deficiencies as the prime

**Corresponding author: E-mail: drawad.ali6@gmail.com;*

cause of such obstacles. These are: deficiency of training (12%), low income (4%), arrogance of radiologist (2%), nonexistence of a strong syndicate (2%) and lack of jobs (2%). Finally, (10%) preferred “no comment” as a response.
In spite the fact that many RTs criticize the current situation of their work, they have become an important part of healthcare teamwork. To sum up, judging by the outcome of this study, we emphasize the need to remove these hindrances as well as the continuation of developing RTs.

Keywords: Radiologic technologist role; obstacles of development; healthcare; work environment.

1. INTRODUCTION

A radiology technologist (RT) is a trained health professional who produces high quality medical images for radiologists and physicians. These images are used to diagnose and treat numerous injuries and diseases. Therefore, an RT is an indispensible member of the healthcare team. The role of RTs is of utmost importance because these individuals are responsible for applying several methods of imaging procedures such as X-Rays, mammography, CT - scans, MRI and U/S, to assist medical specialists for diagnosing or monitoring a patient's injury or illness. Radiography education in Sudan, at a quick glance, dates back to 1932 – 1995. There was a huge change in the curriculum to award bachelor’s degree (BSc) rather than a diploma certificate [1]. At this juncture, it is worth mentioning that Sudan is the first country in the region to introduce BSc, Master’s and PhD programs in medical imaging technology [2].

Following the development of RTs, major changes in healthcare delivery have occurred over the past 2 decades. In April 2012, for example, the Australian Institute of Radiography (AIR) convened a workshop (Inter Profession Advisory Taskforce–IPAT) meeting with representatives from the Royal Australian and New Zealand College of Radiologists (RANZCR), amongst others, to usher in an advanced clinical role for registered radiographers with a summary of thirteen recommendations [3].

The United Kingdom (UK) and United States (USA), on the other hand, have introduced the Radiographer Advanced Practice Model into their jurisdictions to face the challenges of decreasing ratios of radiologists to support the increased demands [3, 4]. The National Health Service in the UK, (NHS), has also sought to meet the growing demands of the healthcare industry [3,4,5]. A decade ago, the UK government introduced a legislation to allow approved and certified radiographers to report on selected images, thereby reducing the radiologist workload and hence improving healthcare service delivery as well as cost savings [4,6]. Sadly, to the best of our knowledge, we don’t have any such studies conducted in Sudan to refer to such an important issue. So this is the first study to explore the main obstacles that handicap the development of the role of RT in Sudan.

2. METHODOLOGY

In order to carry out this study, the well-known methodology known as KAP (Knowledge, Attitude, Practices) was implemented to tackle the question of the study. The KAP study uses fewer resources and it is more effective compared to other community study methodologies because the focus of the latter has scope limitation. However, KAP methods show the knowledge of the population in specific details such as feelings and behaviour. Accordingly, every study is designed for exploring a certain issue [7]. The attractions of KAP scanning, however, is attributable to numerous advantages such as simplicity of designing, quantifiable-data-brief display of outcome, generalisability of the findings of few sample to a larger scale population, comparison between cultures, speediness of application and ease of data analysis” [8]. Furthermore, KAP methods shed light on the social and economic factors that might impact health and the running of public health initiatives. Moreover, “there is growing awareness within the International community that mending the health of poor inhabitants around the world rely on a adequate understanding of the socio-cultural and economic aspects of the situation in which public health programmes are carried out. Such data has typically been collected among several kinds of cross-sectional surveys; the most used on a large scale is the KAP survey” [8].

To collect data, a brief cross-sectional study conducted from August 15, to November 15, 2014. The questionnaire was distributed randomly to a group of RTs. This group

comprises an array of experienced participants who work in different sectors, including clinical practitioners and academics. The Questionnaire was explained to the participants and the consent was obtained.

The survey was launched randomly in two ways: (1) a questionnaire was distributed directly to the group of RT working in Khartoum, Omdurman, Bahri and Shendi hospitals. (2) For the second group, the questionnaire was sent to all online graduate participants to ensure reaching out for the largest numbers possible.

As for the limitation of this study, the survey was restricted to some RTs because it was conducted during a short vacation. Regrettably we couldn't reach out to some of them. Furthermore, the questionnaire was answered by RTs during their very busy working hours.

Moreover, to avoid any unwillingness to participate in the survey, respondents were assured that the survey would only be for research purposes and that privacy and anonymity would doubtlessly be protected. This study was conducted in acquiescence with the Institutional Review Board/Human Subjects Research Committee Requirements. The main purpose of this study was to explore the most well-known obstacles in the development of the role of RTs in Sudan.

A brief survey consists of the following questions:

- The participants' gender, workplace, qualification and practical experience;
- Open question about the most well-known obstacles in the development of the role of RTs in Sudan.

The questionnaire was revised and modified by qualified radiology teaching staff members.

3. RESULTS AND DISCUSSION

The total number of RTs participated in this study was 139. Among these, 88 (63.3%) were male and 51(36.7%) were female (Fig. 1). A total of 41 (29.5%) of the participants were working in the governmental sector, 70 (50.4%) of them were working in the private sector, and 28(20.1%) were working on both governmental and private sectors (Fig. 2). Out of the total subjects who participated in this study, 91(65.5%) were Bachelor degree holder, 6(4.3%) with diplomas, 38 (27.3%) have Master's degree and 4(2.9%) PhD holders (Fig. 3). The total years of practical experience of the respondents ranged from 1-5 (47.5%), 5-10 (10.1%), 10 to 15 (13.7%), 15-20 (11.5%), 20 to 25(5.8%), more than 25 years (4.3%) and only 7.2% had no comment (Fig. 4).

The research question draws its significance from the need to explore the perceived main obstacle which would handicap or discourage the development of the role of RTs. The result showed that 83 (59.7%) there was more than one obstacle so, 12(8.6%) related the obstacle to the bad environment (with no protection from radiation), while 12 (8.6%) opted for inadequate Job description and lack of post graduate studies and conferences. Similarly 12 (8.6%) pointed to deficiency of training, 4(2.9%) low income and 2(1.4%) blamed each of the following: radiologist arrogance, absence of a strong syndicate and lack of jobs. Finally 10 (7.2%) gave "no comment" as a response (Fig. 5).

These results indicate that there is a big number of obstacles facing RTs in Sudan. Unfortunately, these obstacles disappoint and discourage RTs. Undoubtedly; this frustration has a negative effect on the development of the role of RTs. Therefore this will have a negative impact on the quality of health care services.

For the sake of comparison, a Google search of previous studies revealed an important article written by Cynthia Cowling who reported on an electronic page (e28 to e32) that there was a trend of practical steps which has initiated the provision of funds aimed at offering RTs in Fiji (WHO, Pacific Regional Workshop) training in on Image Interpretation [9]. In contrast, our results showed that a restricted job description coupled with arrogance of some radiologists diminishes the development of the role of RT in Sudan (Fig. 5).

The manuscript of Cynthia's study also showed some issues and displayed examples of developments in different countries. Besides, in the UK and the USA, where extensive studies had been carried out, there is already a wealth of published material about the role of RTs [10]. Moreover, the is an article that described some of the advances that have been made in the three main areas of the International Society of Radiographers & Radiological Technologists (ISRRT), The Americas, Europe/Africa (E/A), and Asia/Australasia (A/A). It appears that all countries are affected by the determinant of skill mix outlined by Buchan for (World Health

Organization) WHO in 2002 [11]. Buchan's determinant is used as a rough guide for the development of role advancement in countries which can be considered at different levels [12].

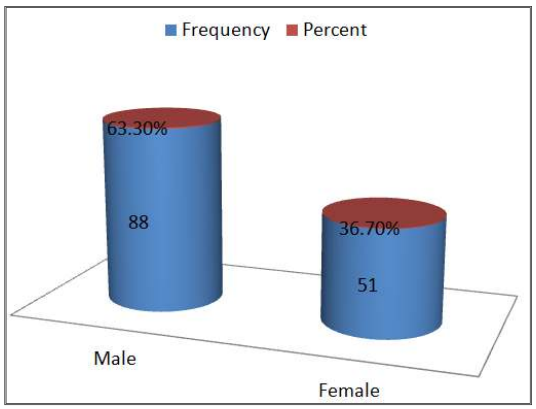

Fig. 1. Gender distribution of radiology technologists

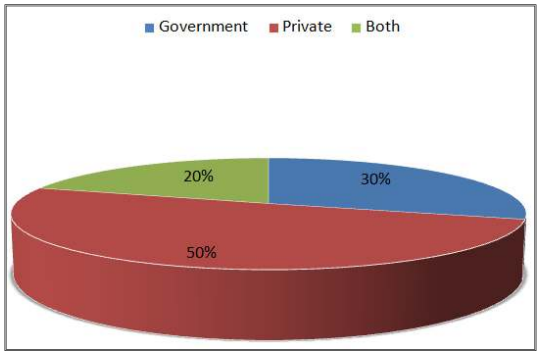

Fig. 2. Distribution of workplace

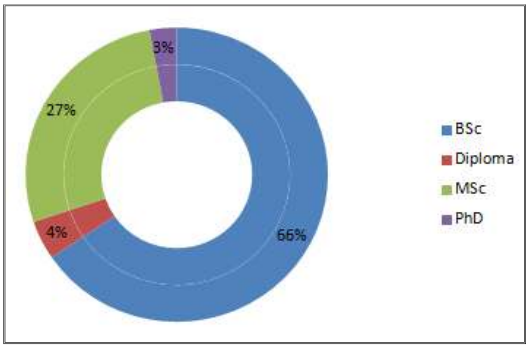

Fig. 3. Distribution of qualifications

The American Society of Radiologic Technologist (ASRT), for instance, has already established its Radiologist Assistant role, [13] and has just adopted a resolution which advocates the associate degree as entry level to practice (the equivalent to a 3-year diploma program in the UK) [14]. The Canadian Association of Medical Radiation Technologists (CAMRT), on the other hand, has long adopted the degree as the entry to professional standards (still a work in progress) but it is working collaboratively with the Canadian Association of Radiologists (CAR) to develop an advanced practice role [15]. The Caribbean nations, however, are struggling to achieve full recognition of their radiography professionals, [16] but a consultative role could arise in the next 10 years [17]. Compared to all of the previous studies mentioned above, our study showed that we need to develop the role of RTs in Sudan to a greater extent.

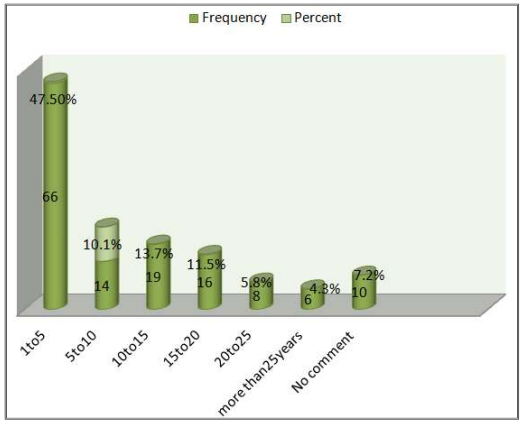

Fig. 4. Illustrates the total of practical experience

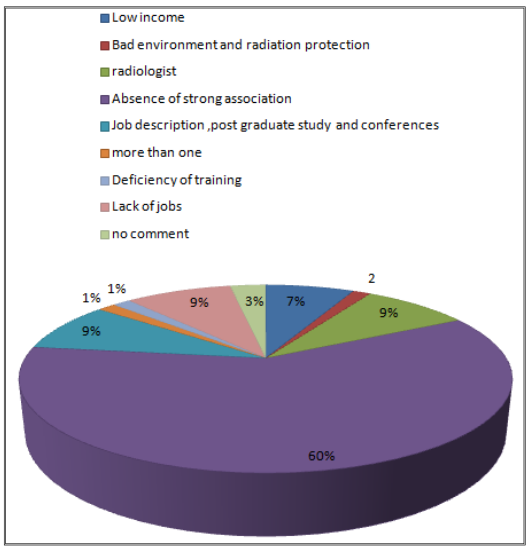

Fig. 5. The most significant obstacles in the development of the role of RTs

4. CONCLUSION AND RECOMMENDATION

This is the first study of its kind in which our subjects focussed on the key issue of the major limitations which hinder the development of the rule of RTs in Sudan. Based on this study, all participants of the study acknowledged that bad work environment, lack of protection from radiation, inadequate job description, limitation of post graduate studies, deficiency of training, low income, absence of a strong syndicate or union, lack of jobs and radiologist arrogance were the main obstacles facing the development of the role of RTs in Sudan.

One of the limitations of this study is the fact that it was limited to some alumni due to time constraints (we couldn't spend enough time collecting more information from a larger group of RTs because of our short vacation). Moreover, most of our target individuals were too busy to respond through online survey. In conclusion, we recommend that further research needs to be conducted on this important issue. For example, we feel that radiology technologists have a lot to say about this significant issue. Job opportunity should not be limited to or dominated by a specific group of RTs some of whom have to carry out hard duties (almost 24 hours) in order to afford an ever-rising cost of living. Consequently, such working conditions will naturally lead to deprive others from getting work opportunities. Surprisingly some think that RTs themselves are to blame. They are accused of being too passive and that must have surely contributed to the aggravation of such obstacles In addition, we hope that the following recommendations will be examined by the decision-makers in this field to remove such obstacles and consequently improve our healthcare service:

- The job description must be unambiguous and tailored according to the vocational categories and scientific degrees and it must enjoy all benefits designed by the Ministry of Labour.
- Advanced training centres must be provided in all cities to ensure equitable distribution for training opportunities.
- A professional association must be established to sponsor all rights of radiologic technologist, to organize conferences and to cooperate with other related global associations.
- Salaries must be increased and the work environment must be improved.
- It is important that follow-up researchers enhance the methodology of surveys. This should be achieved through increasing the sample of participants and changing the style of the questionnaire as well as the way of distribution.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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