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Using Healthcare Information Systems to analysis the Cancer Disease Development in Arab world

ABSTRACT

Cancer is the major public health problem in developing countries. According to the international Agency for Research on Cancer (IARC). The purpose of the study Coordination of activities within the Arab world and collaborative in cancer research among cancer research Institutes and healthcare organization based on the health information systems.

Also, many approaches have been proposed for the some Arab countries to establish the health information systems and starting the cancer registry project in order to provide a good treatment for patients and how to develop effective cancer control programs, enhance cooperation in medical research. However, most of these researches did not address gaps in the decentralized and autonomous in healthcare organizational units. This study cover the recent review the relevant PubMed literature and cancer incidence data from various sources in the Arab world, and describes the health information systems precisely cancer registry project status. The objective from the current research was describes the cancer development in Arab world, the level of adoption the health information systems and Barriers to adapt in Arab world. The analysis of the collected data shows there is cancer incidence in Arab countries is increasing. It has been found that there is a need to adapt the health information system cancer control and prevention, planning strategy among healthcare organizations and research institutes. Is an essential step in facilitating this process, because it can improve cancer registries, create robust infrastructure, improve skills of personnel and lead to effective cancer control and prevention.

Introduction

The global burden of cancer is rising with almost 70% of cancer cases being in low- and middle-income countries (LMICs). The Arab world and Asia have two thirds of the world's population and the largest regional concentration of LMICs. Because of massive demographic and epidemiologic transitions, cancer mortality is projected to increase substantially in these populations [1]. It is predicted that by 2030 more than 26 million incident cancer cases will occur

Each year more than double the 12.4 million new cancer cases [2]. Since the literature regarding cancer registration data and associated epidemiological findings are scattered, the present research was undertaken to provide an overview of the global burden of cancer development in Arab world. A more general coverage has not been hitherto been available. All sources available to the authors were therefore accessed to give as comprehensive a picture as possible regarding the cancer burden, risk factors and preventive approaches. Representative relevant papers in PubMed

were cited with the focus on individual organ sites, in an attempt to explain variation in incidence rates in terms of accepted risk and beneficial factors.

According to [3]. The current research in medical domain refers to Cancer incidence in Arab countries is increasing. This is due partly to reduction in the incidence of infectious diseases, Increase in the population average age, westernization of social and dietary habits, Increase smoking, Increase of the incidence of hepatitis B and C, Wrong use of plastic materials, pesticides and insecticides, Low socioeconomic status. By 2050, it is projected that low-income countries alone will account for up to three-quarters of all cancer deaths [4]. As mentioned above the progression for Cancer disease in the Arab World and was describes Magnitude of the Problem from medical perspective.

As mentioned above we need to established and adopt the Health information Systems (HIS) to control the diseases, it is provides the umbrella framework to describe the comprehensive management of health information and its secure exchange between consumers, providers, government and quality entities, and insurers [5]. Its role in public health is unmatchable because it plays a vital role in early detection of infectious disease outbreaks around the country, improved tracking of chronic disease management, monitoring healthcare programs and coverage, evaluation of health care utilization, and in making transparent and evidence-based decisions for health system interventions In addition, HIT also reduces the paper work by eliminating the needs of paper based record and improve the administrative efficiency. It improves the healthcare by decreasing medical errors with an assurance that all the healthcare providers have accurate and timely information. Health information technology in general is increasingly viewed as the most promising tool for improving the overall quality, safety and efficiency of the health delivery system [6].

We was present the benefits the health information systems, It's provide integration among the different healthcare organizations to provide high quality from health care to patients. Some Arab countries established the health information systems, The most famous Cancer Registry Project (CRP).Through the study we will review of the cancer disease evolvement in the Arab world depend on the information source from the Cancer Registry Project for Arab countries, according to Middle East Cancer Consortium (MECC) the CRP was started in January 1998, supports cancer registration in all MECC jurisdictions. Population-based registration can be used to inform public health planning, cancer research, and cancer control programmers .The CRP has emphasized from its inception the importance of high-quality data. The achievement of data

standardization, accuracy, and coverage enables international comparisons of cancer incidence.

The Arab world includes 22 countries with a total population of about 300 million people. The urban/rural population split is about 49.7% urban, 50.3% rural. According to [7]. We found the Arab world tow types from the cancer registry project (CRP) as (National Cancer Registry, Regional Cancer Registry), that only 4 Arab countries have National Cancer Registry this ratio represent 18% , and 2 Arab countries have Regional Cancer Registry this ratio represent 9% , The rest 16 Arab countries without cancer registry 73% .This reflection for the low rates adoption health information systems because the cancer registry project is important element in health system and the Cancer disease is already a major problem according to recent researches. The following figure (1) describes Cancer Registry Project (CRP) status in Arab world. This is an indicator of decentralization and poverty in the level of medical information should be available to address diseases control programmers.
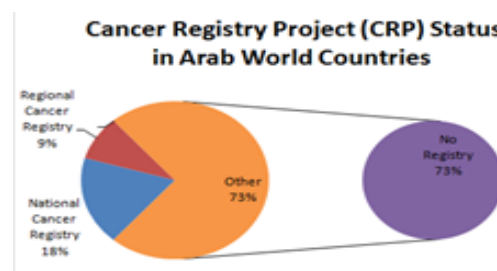

Figure (1): Cancer Registry Project (CRP) status in Arab world

The purpose of this study was to catalyze and supported to adoption health information systems and established the cancer registry project we can able to Estimate the overall cancer burden in the Middle East and Identify any unusual cancer patterns, Provide an evidence base and knowledge base for health policy planning and support the collaborative and Catalyze collaborative cancer research and the development of cancer control strategies and programmers.

MATERIAL AND METHODS

This research follows a descriptive approaches based on semi-structured interview and questionnaire [8]. The Documentation techniques to collect data interviews are much more interactive. As well the questionnaire technique is kind of survey method and used to collect data from a big number of respondents easily. Also the documentary information is relevant to case study topic. Also, researcher can clarify questions for the respondents

[9]. In this research, both techniques have been used.In this study, the National Cancer Institute (NCI) - Cairo university in Arab Republic of Egypt, that participated in this research. In the Arab world there are a number of research institutes specializing in achieving leadership in the treatment of the problem of cancer and trapping at the regional level in the areas of research, training, education and treatment. The most prominent of these institutes of the (NCI) . The NCI consists of nine departments interested in patient care, three special units among early detection unit, bone marrow transplantation unit, dentistry unit, also the registries and data department interested in biostatistics and cancer epidemiology, in addition system control unit.

The biostatistics and cancer epidemiology has been addressed to represent as a whole healthcare system, because of difficulty to study whole healthcare system in NCI [10,11,12]. Therefore, the physicians and experts of these Institutes (biostatistics and cancer epidemiology, national cancer registry program of Egypt)require cooperation among them to Provide an evidence base and knowledge base for health policy planning and support the collaborative and Catalyze collaborative cancer research and the development of cancer control strategies and programmers based on health information systems.

Samples selected of participants are physicians and experts select participants because they are willing and available to be studied. In-depth interviews were conducted with five physicians from NCI and four experts including hospital manager and NCI dean. Each session was taking around 1-2 hours of each interviewee. With the permission of the physicians data was recorded and written, and summarized in notes. We have adopted in the questionnaire based on the research is interested in improving cooperation in the field of distributed health care information systems was conducted in Iraq in 2012. The NCI biostatistics and cancer epidemiology department provide this research the documentation related cancer data in Arab world.

Data Analysis and Findings

Responses obtained through questionnaires and interviews and documents are combined and presented to identify problems of the HIS environment, to identify the cancer development in Arab world and level of adoption the health information systems and Barriers to adapt it in Arab world.

The lack medical data it's obstacle in the to identify the diseases development in the Arab world. This reflection low level from adoption the HIS. According to [1]. Describes the problems in HIS From the questionnaire, 74.1% of the respondents indicated that there is no computer-based HIS, and also

88.68% of them said there is no any distributed HIS between hospital units and other hospitals. Moreover, 37.0% and 19.8% of the respondents stated that they have poor and very poor cooperation between them respectively. This indicates that 56.8% of the respondents said there is poor connection between them in a same hospital. Also, 86.4% of the respondents declare there is no any connection between them in different hospitals. Therefore, there is lack of the cooperation between physicians in same and different hospitals. These ratios prove the validity of the resulting ratios Cancer Registry Project (CRP) status in Arab world, it's related with HIS development in Arab world.

According to [13,14.15]. Describes the evolvement the cancer patients in the Arab world, and identify the most cancer types Prevalent and epidemic among male, female in the Arab world. The following figure (2) describes the magnitude of the problem for the cancer incidence data for Arab countries – females.
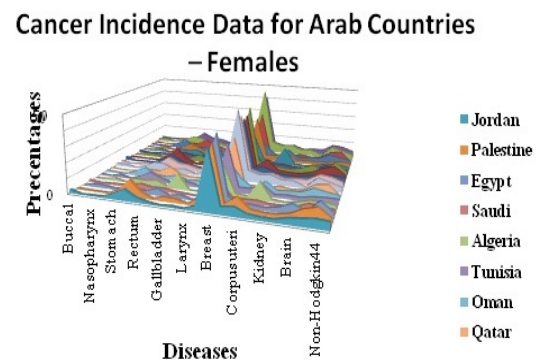

Figure (2): Cancer Incidence Data for Arab Countries – Females

The Breast cancer among female most prevalent and epidemic, the ratio breast cancer in Jordan 38%, Palestine 38.5% , Egypt 42.5%, Saudi 11.8%, Algeria 18.8%, Tunisia 29%, Oman 14.6%, Qatar 30.1%, Bahrain 46.8%, Kuwait41.3%.These percentages indicators on the dangerous spread of the disease and its development. The following figure (3) describes the magnitude of the problem for the cancer incidence data for Arab countries –male.
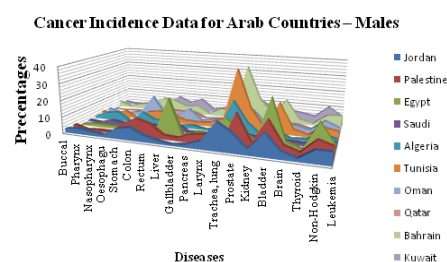

Figure (3): Cancer Incidence Data for Arab Countries –male.

The most prevalent and the highest percentage of

injury for the bladder cancer -male in the Arab world, The ratio disease in Jordan 13.2%, Palestine 18.1%, Egypt 27.9%, Saudi 2.9%, Algeria 4.5%, Tunisia19%, Oman 5.1%, Qatar 1.8%, Bahrain 17.4%, Kuwait 6.3%.

As mentioned above the finding from recent literature the cancer is already a major problem and the lifestyle changes underlying the markedly increasing rates will only become heavier over time, especially with increasing obesity and aging of what are now still youthful populations and westernization of social and dietary habits, Increase smoking. This is important to refer to establish policy cancer care and control in Arab World and attention to flexible and quick adaptive Health information systems to unification the health information to provide an evidence base and knowledge base for health policy planning and support the collaborative and Catalyze collaborative cancer research and the development of cancer control strategies and programmers.

Discussions

The present study has attempted to better understand how the health information systems helps to improve the disease control through providing centralized health data and available the knowledge base helping the decision maker (physicians) to present good treatment and Precisely increase the cooperative in health research. The finding from the data analysis and interview confirm to Increase the cancer disease development and the reasons for this evolution to Low socioeconomic status, Increase smoking, and others .The Arab world needing to quick adaptive Health information systems to provide the health care organization as the following :

- The health information system contributes to the provision of comprehensive information about the patient as quickly and efficiency and flexible, the hospitals have an environment dynamics and the need to speed and efficiency in collecting patient data from all departments for the decision maker, the existence of such systems has become inevitable as they make health institution integrated, and provides sharing information between the different units.
- The effectiveness for the Health information systems vital and strategic as sharing the medical data and health information among healthcare institutions between the different units particularly the research and development units. This sharing between the different research and development units based on the privacy protection for the medical data and researchers and those of the main reliability requirements. Thus, this will supporting the decision-making processes of medical right and provides real medical research in addition to the

exact results and reduce health literacy.

Conclusion

Establish Health information systems and adaption in Arab world becomes an important issue to the applied it in the healthcare organizations. that it would be useful to have sharing medical data and information health among the different healthcare organizations particularly the research and development units, this benefits to healthcare organizations in the adoption of health information system, and the conclusion for the HIs benefits as the following:

- Provision of health information widely and rapidly and effectively.
- Improve the quality of healthcare services.
- The research and development unit makes the healthcare organizations trusted units.
- Medical decision-making, administrative and financial health and a more accurate.
- The sharing medical data among different research development units provide an evidence base for health policy planning.
- Catalyze collaborative in the health research.
- Enable the development of disease control strategies and healthcare programmers.

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