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## **How successful is the College of Health Sciences, Kuwait, in reducing dependence on expatriates?**

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**Abstract.** The importance of technical and vocational education in enhancing student's capabilities, reducing unemployment level among youth, increase work wages, reduce poverty, and create an aspiration and hope among youth is highly noted in related literature. The image that technical and vocational education is considered as low-quality education for those who fail to be accepted in higher education is start to vanish. It is a creditable and certified type of education and cost less comparing to enrolling in a higher education institution. In fact, the ability to be employed in higher now comparing to a university degree holder. Industries and business require urgent semi and skilled manpower able to deal with the rapid change in technological changes, particularly those dealing with diversity production techniques. Kuwait as one of the gulf states, lack the availability of semi and skilled manpower in most of the countries sector. In governmental hospitals, the lack of national specialist in medical laboratory, dental care, and natural sciences is pharmaceutical is highly noted. As a result, the government has realized the importance of encouraging Kuwaiti to enroll in the College of Health Sciences with the hope to reduce dependence on expatriates. The research paper focuses on identifying and examining the perception of students at the College of Health Sciences, CHS, towards the quality of teaching and learning. In addition to, examining the perception of the CHS graduates direct supervisor in the health sector towards the standard of the filed training program, and the quality CHS graduates. The research is based on extensive field work that encompasses a review of the related literature, questionnaires, and an interview with a sample of heads of departments at the CHS. Interviews were also conducted with the CHS graduates' direct supervisor in the health sector. Finally, the research will argue that unless the CHS recognize and appreciate the value of building a strong linkage with the health sector, its contribution in tackling the shortage of skilled and semi-skilled indigenous health care specialist will be below the government expectations, thus continuing relaying on expatriates for years ahead.

**Keywords.** Vocational and technical Education, on-the-job training program, developing Indigenous Manpower, Interaction between technical and vocational education and the health sector, quality of the College of Health Sciences graduates, Kuwait

### **Introduction**

The rapid change in the science and technology has created a challenge for technical and vocational education institutions and industries. Industrialist has widened their demand for a broader skill other than those taught at technical and vocational institutions. Among the skills that are required by industries are: emotional intelligence (Maryville University, 2020), communication skills (World Economic Forum, 2020), problem solving (National Association

of Colleges and Employers, 2020), creativity, ability to control emotion especially in hard working environment, team work, loyalty to work, and work ethics. Technical and vocational education, TVE, is a dual system of education that embedded theory and practice. It is a unique and efficient type of education that allow students the opportunity to spend a certain time in industrial premises. Students would be able for the first time to use machines and tools and to be expose to real working environment. Technical and vocational education equipped students with the knowledge, skills, and attitudes mostly needed by world of work. Technical and vocational education consist of education, training and skills development related to a wide range of career opportunities (Asian Development Bank, 2019), provide vocational skills and knowledge, to enhance qualifications and promote both career and communication culture compatible with the main principles of education (Mongolia Law, 2002), deliver training service based on the requirements of the society (NPDTVE 2021), increase productivity and increase wage levels (UNESCO, 2016), and enhance youth expectation of employability (UNESCO, 2020) Technical and vocational education is considered as an effective solution to the sharp increase of youth unemployment in global market. It estimates that at least 475 million jobs required to be generated to absorb the 73 million currently unemployed youth population, in addition to, the influx of 40 million fresh entrants to the workforce market. (UNESCO, 2019)

Technical and vocational education has undergone a continuing reconstructive to ensure that students can acquire the necessary skills that are in urgent need of industries. A notable attention has been devoted to enhance teacher's competencies in the reviewing and redesigning of technical and vocational curriculum. Teachers must be aware of the component of technical and vocational curriculum and method applied in teaching and learning. In addition, teacher's quality of work is a result of commitment among teachers (Gomendio, 2017), ability to o control and mange emotions to handle essential information appropriately (Chai et al., 2017), and the quality of their relationship with students. (Gabriela Gabrhelova, 2016)

The role of industry in the success of technical and vocational education is highly stressed in related literature. It is through an effective collaboration between technical and vocational institution and industry that effective learning can be accomplished. (Watisin, 2017) Education programs should provide students the opportunity to connect academic learning including knowledge and skills required both professional and for private lives. (Fung, 2017) Interaction between technical and vocational institution and industry can indeed enhance students' knowledge, skills and attitude that are mostly needed by industries. The dual system of apprenticeship has been noted to play a vital role in closing the gap between technical and vocational institution and industry. It is an effective method that would permit a smooth school to work transformation. It combines of workplace extensive training programs that allows students to convert theory into real practice under the supervision of workplace supervisors. Younger apprentices reap higher in their first year in working in labour market than other vocational student qualified at the same degree. (Cavaglia et al, 2020) As a result, a close collaboration between technical and vocational institutions and industries is considered highly significant to ensure the provision of transferring the relevant skills through on-the-job training programs and apprenticeship. In fact, the adaptability of the manpower must be promoted through the development of transferable skills, wider technical and vocational profiles, on-the-job learning program that encompasses apprenticeship. (The World Bank, 2016)

In developing countries, technical and vocational education has a great potential in reducing poverty, increase change for employment, high wages, and livelihood for workers, particularly younger workers. Kuwait as one of the gulf states has realized the importance of technical and vocational education in reducing the dependence on expatriates, especially in essential sectors on the country's economy (e.g., oil, electricity and water, health care,

constructions). It is the believe of the Kuwaiti government that technical and vocational education would accelerate the country's economic and social growth as well as preparing students to take over expatriate in the most crucial sector in the economy. The Kuwaiti government has forged the Public Authority for Applied Education and Training, PAAE&T, to respond to the urgent of essential sectors of the economy from semi and skilled indigenous manpower. The PAAE&T aims include interaction with major institutions in the labour market, training national manpower, joint research with local industries, and linking programs to society's needs and requirements. In another word, the Kuwaiti government attention is not only to prepare students to the world of work but also to closing the gap between technical and vocational institutions and local industries.

The PAAE&T has five colleges and eight training centers. The College of Health Science, CHS, has been forged in 1974 under the umbrella of the PAAE&T. Among the main objectives of the CHS, are: "Rehabilitation of the college graduates to work in hospitals, medical centers, pharmacies, pharmaceutical factories, and many state institutions in the fields of environment, safety and industrial health, and work to provide qualified, distinguished and appropriate scientific and technical cadres to meet the needs of the labor market in all specialized fields without the need for additional training programs". The current population of Kuwait in 2021 is 4,328,550 a 1.36% increase from 2020. Expatriates account for about 70% of Kuwaiti population, among which 1.1 million Arab expatriates and 1.4 million Asian expatriates. (World Population Review, 2021) The health sector in Kuwait relies heavily on expatriate's manpower. The government policy so called "Kuwaitization" which stipulates that Kuwaiti will be the dominate nationality in the health care over the coming years seems to be unrealistic and unattainable. For instance, the number of indigenous nursing is declining at an average decrement rate of 3.3% per annum. The gap between national nurses and expatriates is widening and unfortunately will continue to overcome the number of national nurses for years ahead. The number of Kuwaiti nurses is 1120 compare to 24960 non-Kuwaiti. The number of Kuwaiti pharmacists is 1402 compare to 3069 non-Kuwaiti. Other para-medica staff, the Kuwaiti staff is 201 compare to 1201 non-Kuwaiti. (Ministry of Planning, 2019) Therefor, the focus of this research is to examine how successful is the College Health Sciences in reducing dependence on expatriates in the health sector. Three main departments were selected to form the CHS sample, they are namely: Department of Pharmaceutical Sciences, Department of Medical Laboratory Technology, and Department of Oral and Dental Health. It hopes that the results of this research would guide the management of the CHS in setting and implementing an appropriate and an efficient plan that would contribute significantly in enhancing the quality of the CHS graduates.

Thus, reducing the level of dependence on expatriates in the health sector.

### **3. Research Objectives:**

- a. To identify and examine student's perception towards the quality of teaching and learning at the CHS.
- b. To identify and examine student's perception towards the quality of field training program provided at the CHS.
- c. To identify and examine the level of interaction between the CHS and the recipients of the CHS graduates (the health sector).
- d. To identify and examine the perception of CHS graduates direct supervisors at the health sector towards the quality of the CHS field training program.
- e. To identify and examine the perception of CHS graduates direct supervisors at the health sector towards the quality of the CHS graduates.

f. To identify and examine those obstacles (if any) that might affect the quality of the CHS graduates.

g. Discussions and Recommendations.

The outcomes of the research would indeed guide the management of the College of Health Sciences, CHS, to improve the quality of their graduates. In addition, enhancing the standard of academic staff and enrich their knowledge, skills and attitudes towards strong collaboration with the recipients of the CHS graduates. Overall, achieving the CHS objectives in providing the recipients of the CHS graduates with skilled and semi-skilled indigenous manpower. Thus, reducing dependence on expatriates in the health sector.

## **4. Materials and Methods**

### **4.1 Design**

This research consists of a descriptive survey designed to identify and examine student's perception towards the quality of teaching at learning at the CHS. The research would identify and examine student's perception on the quality of teaching and learning at the CHS. In addition to, examining the type of interaction between the CHS and the recipient of the CHS graduates. The research would focus on whether the CHS students acquired the necessary knowledge, skills and attitudes that are suitable to the recipients of the CHS graduates (hospitals and clinics). In addition to, examining the perception of the recipients of the CHS towards the quality of the CHS graduates who were employed five years ago at the health sector until now. The research would focus on the requirements as well as the obstacles that may hinder the enhancement of the quality of teaching and learning at the CHS as well as the methods for strengthen the linkage with the recipients of the CHS graduates.

### **4.2 Sample**

The research would encompass personal interviews with (3) heads of academic departments

at the College of Health Sciences. They are namely, Department of Pharmaceutical Sciences, Department of Medical Laboratory Technology, and Department of Oral and Dental Health. Several issues were discussed among which are: whether the selected departments have a data base for the CHS graduates in the health sector, the type of interaction with the health sector, and the obstacles that might hinder the improvement of the quality of the CHS graduates

In respect to the recipients of the CHS graduates, an interview was conducted with six supervisors, in three major hospitals, responsible for the CHS field training program as well as those supervisors who are in constant contact with the CHS graduates. The selection of supervisors was based on those supervisors who have a minimum of 20 years of working experience at the health sector. Among the issued that would be discusses are: evaluating the quality of field training program, graduates' attitudes towards working in the health sector, level of knowledge, skills, and attitudes, communications skills, ability to deal with patients, ability to prepare a medicine, work ethics, finishing job on time, and work loyalty.

A questionnaire was design and send to a sample of students specialized in the three selected departments at the CHS. In all, approximately 331 students' questionnaires were sent through online platform and 204 questionnaires were completed and received. This represents a (62%) response rate. The main objective is to identify and examine student's perception of various aspects of the standard of teaching and learning at the CHS. Among the issue that discussed were: whether students have chosen the CHS as a first chose, whether students would work in the same specialization after graduation, student's perception towards adapting to work requirements, readiness to work long hours, obligation to complete job on time, quality of

learning and teaching, and student's perception towards the standard of workshops and laboratories at the CHS. Students were also questioned about the standard of teaching and learning such as: whether CHS lecturers' emphasis on creativity, follow health and safety procedures, discussed and analyzed real case studies, enhancing communication skills, and stress on work loyalty and ethics. The CHS students were also questioned to evaluate the standard of field training program. Several issues were discussed such as: the suitability of the field training program duration, the proficiency of the field training program, ability to use medical apparatus, and applying health and safety procedures.

#### **4.3 Instrumentation**

The target population for this research consists of (3) heads of departments at the College of Health Sciences. In respect to the recipients of the CHS graduates, a personal interview was conducted with those supervisors responsible for the CHS field training program as well as those supervisors who are in constant contact with the CHS graduates. The aim is to obtain an in-depth information on the quality of the CHS graduates and the level of work readiness. A questionnaire was designed, tested, and completed to a sample of 204 female students at the CHS.

#### **4.4 Statistics and Parameters**

The statistics pertain to the sample. The parameters pertain to an entire population.

#### **4.5 The research parameters/sample are as follows:**

- (a) Selected (3) heads of academic departments at the College of Health Sciences. They are namely, Department of Pharmaceutical Sciences, Department of Medical Laboratory Technology, and Department of Oral and Dental Health.
- (b) 204 female students at the CHS.
- (c) Interviews with student's/graduates' six direct supervisors in three major hospitals at the health sector.

### **5. Research Findings:**

#### **5.1 The Characteristic of the Research Sample**

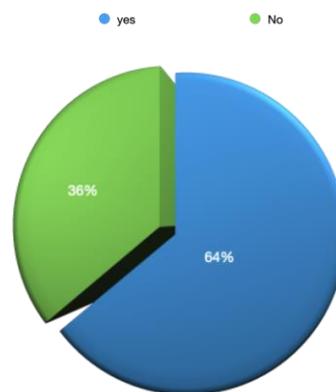
Interviews were made with (3) heads of departments at the College Health Sciences. They are namely, Department of Pharmaceutical Sciences, Department of Medical Laboratory Technology, and Department of Oral and Dental Health. The aim was to seek an in-depth information regarding the type of collaboration between the CHS and the recipients of the CHS students and graduates (e.g. health sector). It is essential that the CHS to forge a strong linkage with the health sector to ensure maintaining a highly quality of graduates.

Interviews were conducted with six supervisors at three major hospitals, the health sector who are responsible for monitoring the CHS field training program as well as assessing the standard of the CHS graduates who were employed five years ago at the health sector until now. The selection of supervisors was based on those supervisors who have a minimum of 20 years of working experience at the health sector. The objective was to examine their perception towards several issues related to field training program (e.g., students' attitudes towards participating in field training program, ability to use medical apparatus), and evaluating the quality of the CHS graduates (e.g., ability to deal with patients, communication skills, work loyalty and ethics).

A questionnaire was designed, tested and administered to approximately 331 female students at the CHS. In all, 331 female questionnaires were distributed and 204 were completed. This represents a (62%) response rate. The main objective was to identify and examine their perception of various aspects of teaching and learning at the CHS. In pursuing such objective, respondents were questioned to provide their perception towards the standard of learning and teaching, the quality of laboratories, and the ability of lecturers and trainers in provided the necessary knowledge and skills that are mostly needed by the health sector. The distribution of the selected student's sample was as follows: (103) questionnaires from Department of Pharmaceutical Sciences, (99) questionnaires from the Department of Medical Laboratory Technology, and (2) questionnaires from the Department of Oral and Dental Health. At present, there are only (31) female students registered at the department of Oral and Dental Health.

### **5.2 Measuring student's perception towards attending the CHS.**

An effort has been made to investigate whether students have chosen the CHS as a first preference for their future career. The majority of the selected students (64%) have chosen the CHS as a first chose for their career. However, 36% of the selected students have not selected the CHS as a first chose.



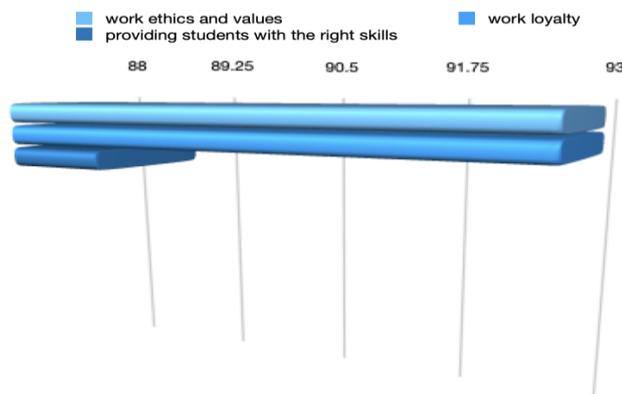
When asked to indicate if students wish to work on the same area of specialization after graduating from the CHS, 60% gave a positive answer "yes". However, when questioned if students would accept another job with a better salary but in completely different filed of speciality, 46% of the selected sample provided a positive answer "yes"! On the other hand, the majority of the selected students (75%) speculate that they would continue to work in the same speciality in the health sector for years ahead.

*Would you accept a job with different speciality if you have been offered a better salary?*

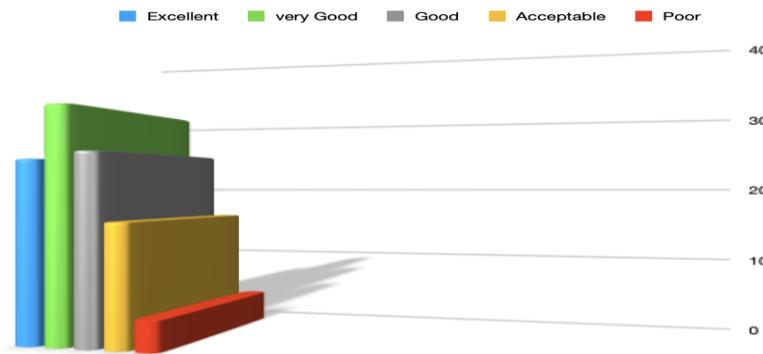


### 5.3 Measuring students perceptions towards the quality of teaching and learning.

The study also highlighted on measuring student’s perception towards the quality of teaching and learning at the CHS. Students seems strongly agree (95%) that lecturer presented real cases studies, stressing on safety and health aspects (93%), ensuring that students gain the right knowledge (93%), stressing on work ethics and values (93%), enhancing work loyalty (93%), providing students with the right skills (89%), applying proper students’ performance evaluation scheme (85%), allowing students to use medical apparatus (84%), ensuring the availability of related medical apparatus and tool (82%), proving raw materials (82%), updating curriculum (81%).



Surprisingly, students have rated the ability of lecturers in achieving course objectives as excellent by only 24% of the selected students, follow by a rating of a “very good” rating (31%) and the remaining (45%) have rated the ability of lecturers in achieving course objective as “good” and below.



#### **5.4 Measuring students perceptions towards the quality of the laboratories.**

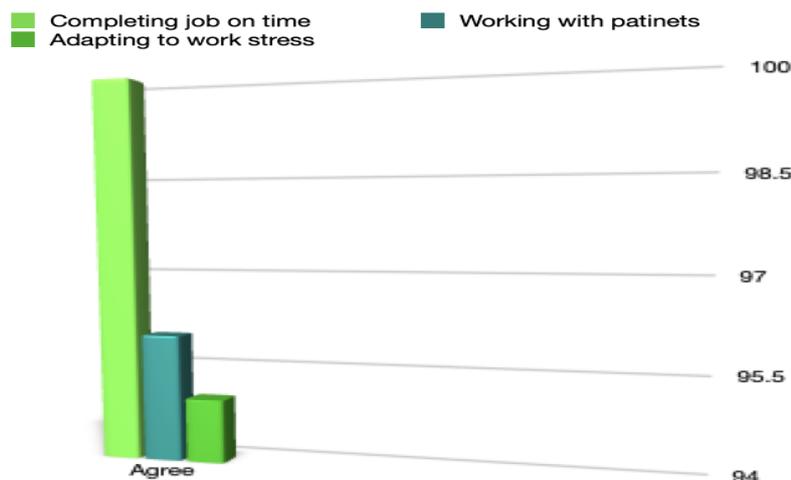
It was essential to identify student's perception towards the quality of laboratories at the CHS. Selected students voiced concern regarding the unavailability of the right number of medical apparatus (40%), the lack of recent medical apparatus (36%), the lack of diversity of the cases presented by the CHS lectures (33%), the shortage of enough raw material (24%), and the unavailability of recent books and notes related to the assigned curriculum (22%). On the other hand, selected students "agree" on the application of health and safety procedures (93%), the ability of lecturers in solving cases studies (89%), and the availability of a proper teaching environment (85%).

#### **5.5 Measuring students perceptions towards the quality of field training program.**

Students were questioned to evaluate the quality of field training program at the CHS. The findings showed that the majority of selected students has "agree" on present of the CHS supervisor (90%), ability to identify work problems (90%), stressing of work ethics (90%), the present of the work supervisor (88%), promoting team work approach (88%), obtaining the required knowledge (87%), the suitability of filed training program duration (78%), ability to use medical apparatus and tools (78%), the availability of update medical apparatus and tools (78%), the diversity of cases studies (85%), competence of work supervisor (84%), acquiring the necessary skills (84%) and enhancing the level of knowledge (84%).

#### **5.6 Measuring student's perception towards working in the health sector.**

When asked to indicate if students wish to work on the same area of specialization after graduating from the CHS, 70% gave a positive answer "yes". An attempt was made to identify student's perception towards working condition. The majority of selected students chive no objection on completing job on time (100%), working with patients (96%), adapting to work stress (95%), attending work meetings (93%), attend work on an emergency circumstance (90%), working night shift (82%), and may standing most of the time to finish an assigned job (78%). When asked if students made the right choice in registering at the CHS, the majority of the selected students (94%) think they have made the right chose in selecting the CHS for their future career. When asked if you would recommend the CHS for your friends, 84% gave a "yes" answer.



### **5.7 The availability of data base regarding the progress of the CHS graduates.**

Interviews have been made with the heads of the selected departments at the CHS to identify and examine the types of collaboration with the health sector. Surprisingly enough, no sign for an effective collaboration has been found with the health sector. In fact, the heads of the selected departments have indicated that the health sector have significant contribution is various academic activities such as: curriculum development, joint research, updating laboratories, and evaluating field training program or assessing the quality of the CHS graduates. An attempt has been made to investigate if the selected department has a data base regarding the names and contact numbers of those supervisors in the health sector who monitor the progress of the CHS field training program or assessing the quality of the CHS graduates. The findings of this research revealed that no data base or data bank have been allocated nor in the process of completion for evaluating the quality of field training program or assessing the standard of the CHS graduates. Regrettably, when questioned whether the selected departments have an accurate information regarding the names and contacts numbers for those who supervise the CHS graduates in the health sector, the answer was ambiguous. The author has exerted efforts to allocate the names and contact numbers for those supervisors in the health sector to obtain the necessary information to service the objectives of this research.

### **5.8 Measuring the level of collaboration between the CHS and the health sector.**

The importance of collaboration between technical and vocational education and the recipients of their graduates is essential for preparing students for the world of work. Therefore, head of selected departments at the CHS has been investigated whether they have established a linkage with the health sector in various academic activities such as: curriculum development, joint research, updating the CHS laboratories, evaluating the quality of field training program, and the assessing the quality of the CHS graduates. Regrettably, there is minimal evidence of interaction between the CHS and the health sector. In fact, as it has been clarified by two of the heads of the selected departments at the CHS that “due to the type of management in the health sector, maintaining a strong relationship seems difficult”. It has been noted that there was an effort which has been exerted in previous years to build a linkage with the health sector, but unfortunately not succeeded”. However, when interviewing with the selected supervisors at the health sector, they confirm that there is an assigned department for encouraging collaboration with the CHS. However, a modest initiative has been taking to forge a relationship with the

health sector and thus blaming the CHS. Such modest relation is limited to the placement of the CHS students in various departments at the health sector for the purpose of field training program. The lack of collaboration in either reviewing and evaluating field training program or to assess the quality of the CHS graduates is not exist.

### **5.9 The availability of departmental plan.**

An effort has been made to investigate whether the selected departments at the CHS have a proper plan for enhancing the quality of departmental graduates and for the purpose of improving the standard of field training program. Such essential plan would assess in monitoring and evaluating the proficiency and competencies of the CHS graduates while working at the health sector. Unfortunately, the findings revealed no indication of a professional departmental plan that encompasses essential and realist objectives or aims that are related to reducing dependence on expatriates, especially in the health sector, nor a plan that focuses on monitoring and assessing the quality of the CHS graduates.

### **5.10 Examining the perception of the health sector regarding the quality of CHS field training program.**

The research focus on examining the perception of the health sector supervisors regarding the quality of field training program offered by the CHS. As a result, Interview have been made with six selected supervisors in three major hospitals at the health sector in order to assess the quality of field training program. Selected supervisors at the health sector have provided a significant information regarding the quality of field training program that would contribute successfully, if seriously considered, in improving the standard of field training program. Supervisors at the health sector has express their view towards the attitude of the CHS students during the field training program. Nearly half (50%) of the attending students did not consider field training program seriously. Unfortunately, they perceive field training program as “vacation” or a “break” from the CHS classes. In most cases they act uninterested in working at the pharmacies or at the laboratories either in hospital or medical clinics. They tend to sneak out of work for any possible reason. Others, have been influence by other managerial staff in the same work location and totally ignored attending at the allocated pharmacy or laboratory, and instead spend a considerable time in other departments offices. This unpleasant act causes a frustration and discomfort among the supervisors at the health sector The research also revealed that the majority of students lack essential skills that are necessary for working as a pharmacist or as a laboratory specialist such as: communication skills, dealing with patients, work privacy, work loyalty, work ethics, preparing medicine, proper dealing with medicine raw material, understanding and interpreting doctors writing, understanding types of medicine especially those which combined more than one medicine, learning how to record and check the availability of certain medicine, and the ability to communicate in English language. Overall, supervisors at the health sector stress on the need to establish a linkage with the CHS in order to identify needs and set an effective learning curriculum and strict evaluation scheme. In addition to, reviewing the current field training program which has serious deficiencies that has a direct impact of the quality of students and graduates. It is worth mentioning at this point, that male student seems reluctant to dedicate time and effort in field training program comparing to female students. Therefore, supervisors at the health sector are, to some extent, in fever to deal with female students rather than male students.

### **5.11 Examining the perception of the health sector regarding the quality of graduates from the Department of Pharmaceutical Sciences at the CHS.**

In respect to examining the quality of graduates from the Department of Pharmaceutical Sciences. Interview have been conducted with three selected supervisors in three major hospitals at the health sector and crucial information is provided which describe and evaluate the performance and competencies of the CHS graduates. The selection of supervisors was based on choosing those supervisors who have a minimum of 20 years of working experience at the health sector.

**Quality of Pharmaceutical Sciences Graduates**

Elements	%	Comments
Lack of Health Care Concept	60%	Patients Care
Lack of Communication Skills	60%	Doctors & Patients
Irresponsibility	60%	Lack of Work Value
Lack of Confidence	50%	Hesitattaion & Confusion
Inability to Prepare Medicine	55%	Lack of Skills
Lack of Interpersonal Skills	50%	Dealing with Frustrated Doctors and Patients
Unaware of Drug Interactions	60%	Lack of Knowledge & Skills
Lack of Details Orientation	65%	Lack of Skills

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The above findings indicates that 60% of the CHS graduates lack a thorough understanding and appreciation of the concept of caring for patients and probably patients relative. This was worsening by the irresponsible behaviour of 60% of those who showed minimal responsibility about their career. It is obvious that the majority of the CHS (50%-60%) need to acquire a communication skill that enable them to deal with doctors, patients, and colleagues. A special communication skill is highly required to control unacceptable behaviour may resulted from a frustration situation either from patients or their relatives. The majority of the CHS graduates (60%) lack of unawareness of drugs interactions and dealing with medical raw materials when preparing a specific medicine.

**Quality of Pharmaceutical Sciences Graduates**

Elements	%	Comments
Multitasking Skills	65%	Checking Expire Dates & Inventory Check
Lack Patients Advice Skills	50%	Medicane Usage Info.
Inability to Interpret Doctors Writings	70%	Lack of Skills
Lack of Computer Skills	70%	Checking Customer Details & Inventory
Lack of Knowledge	50%	Reading Skills
Lack of Work Ethics	50%	Privacy (HIV, Herpes, Depressive Illness)
Inability to Use Raw Materials	55%	Lack of Skills

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The research revealed that 65% of graduates lack an obvious skill in checking medicine inventory as well as ensuring the availability of the right number of medicines. In fact, graduates (60%) ignore or probably unaware on the importance of checking and removing expired medicine. They may rely on their supervisors or colleagues to take an active action. It is also notable that graduate's inability (70%) to use computer medical software to store or retrieve doctors or patient's data in an efficient manner. The CHS must ensure that graduates maintain high standard as patient's privacy is one of their priority tasks. Others must be aware of patient's illness such as HIV or desperation since this would have a significant side effect of patient's health and reputation.

The CHS must stress on enhancing graduate's knowledge, skills and attitudes in various area related to their career. Among the skills which need to be enhanced are: ability in understanding and interpreting doctors' writings, communication skills particularly with patients, respect work practice, stressing on work loyalty, enhancing work ethics, understanding how to prepare a medicine, medicine registration and documenting, strict examination scheme during studying at the CHS and while attending field training program, strict examination before enrolling at the CHS, ensuring sincere willingness to work as a pharmacy specialist, and communicating in English language. Selected supervisors urge the CHS to forge a strong linkage in order to review and assess the quality of the CHS graduates and establish a strict examination scheme that both parties (health sector and the CHS) can assess the progress of students starting from the first course of enrolling at the CHS.

### 5.12 Examining the perception of the health sector regarding the quality of graduates from the Department of Medical Laboratory Technology at the CHS.

In regard to examining the quality of graduates from the Department of Medical Laboratory Technology. Interviews were made with three supervisors in three major hospitals at the health who are in constant contact with the CHS graduates and have no less than 20 years working experience. Selected supervisors also questioned to evaluate the quality of graduates from the Department of Medical Laboratory Technology.

Quality of Medical laboratory Technology Graduates		
Elements	%	Comments
Lack of Health Care Concept	50%	Patients Care
Lack of Laboratory Protocols	50%	Bateria, Viruses, HIV.
Irresponsibility	50%	Lack of Work Value
Lack of Details Orientation	60%	Not Focusing of Small Data
Effective Communication	70%	English Language Skills
Lack of Blood Test & Basic Pipetting Skills	60%	Fear and Frustration
Unfamiliar of Medical Apparatus & Tools	90%	Lack of Link With The Health Sector

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

The research findings showed that there is a significant evidence that graduates (50%) lack a knowledge on the concept on patients care. The link between the CHS and the health sector seems to be below the expected standard since 90% of graduates were unfamiliar with the types of medical apparatus at work place and showed inability (60%) to conduct simple procedures such as blood test or effective using of pipetting. Selected supervisors at the health sector stress on the need of enhancing graduate's knowledge and skills in applying a strict safety and health procedures. In addition, to, improving the quality of English language (70%) skills, which are considered essential to communicate effectively with foreign doctors, nurses, technicians, and physicians. Indeed, this would enable graduates to follow up new laboratory practice and techniques and enrich their knowledge with the new inventions in laboratories apparatus in the world.

**Quality of Medical laboratory Technology Graduates**

Elements	%	Comments
Lack of Medical Terms	50%	Understanding Critical value Or Low Value
Lack of Understanding of LIS & HIS	90%	Computer Data Skill
Lack of Skills in Dealing With Critical Situation	70%	Doctors, Patients, and Colleagues
Preameritcal Analytical & Postanalytical Info.	90%	Lack of Knowledge and Skills
Unable to Carry Out Dilution Factor 1-5	80%	Lack of Skills

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

Selected supervisors at the health sector emphasis on the issue of medical terms that needs to be stressed by the CHS, since 50% of graduates lack basic medical terms related to their area of specialty. The CHS required to enrich their students with Lab Information System, LIS, and Hospital Information System, HIS, in order to allow graduates to store and retrieve essential data related to patient's health conditions and laboratory results. In addition to, retrieving data for further examination or investigation. It is inevitable that graduates lack basic procedures such as conducting accurate Dilution Factor 1-5 test, since the majority of graduates (80%) show less competence in carrying such significant test. A notable graduate's weakness (90%), in understanding and performing preanalytical, analytical, and postanalytical procedures.

**Quality of Medical laboratory Technology Graduates**

Elements	%	Comments
Lack of Analyzing why Rejecting Results	70%	Understanding Rejection Policy
Lack of Accuracy in Checking Lab. Tests	90%	Computer Data Skills
Inability to Access Information	60%	Patients Information, Computer Skills
Unsafe of Transferring Samples, Haemolysis	50%	Safety & Health Procedures
Lack of Interpersonal Skills	60%	Dealing with Doctors & Patients Frustration

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

It is essential that graduates from the CHS to understand and absorb the concept of health care and understand crucial skills to ensure providing the best health care for patients, relatives, and the society. The accuracy of interpreting laboratory results is highly significant for patient's well-being, since 90% of graduates unable to use un-updated computer software for further analysis and interpretation of laboratory results. The research indicated that 70% of graduates lack understanding of a rejection policy for a laboratory test. Safety and health procedures are essential and critical in laboratory environments which expose to bacteria and viruses and other life threatening hazards. Graduates (50%), are required to carefully transfer laboratory sample to prevent any damage or causing interference with the originality and safety of the laboratory sample. Selected supervisors stressed on the need to enhance graduates with interpersonal skills that enable graduates to deal with work stress, cope with working in a dangerous environment, and managing doctors and patients' frustration.

**Quality of Medical laboratory Technology Graduates**

Elements	%	Comments
Lack of Organization Skills	65%	Large Volume of Medical Tests Results
Unaware of Lab. Test Methods	50%	Manual, Automated, Semi-Automated
Unaware of Routine & Special Tests	50%	Lack of Knowledge
1.	Enzyme Linked Immunosorbent Assay (ELISA)	
2.	Indirect Immunofluorescence Test (IF)	
3.	Nephelometry	
4.	Radial Immunodiffusion (RID)	
5.	Immune Blot Techniques	
6.	The Principle of Flow Cytometry	

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

Indeed, there are essential skills that laboratory specialist must acquire such as organization and sorting laboratories request and results, in order to provide doctors with the needed test results in a safe and quick manner. However, 65% of graduates have not practice dealing with large number of laboratory tests neither they are able to organized and store laboratory documents in a special software. Graduates (50%) inability to differentiate between types of laboratory tests are notable by all selected supervisors at the health sector. When asked to identify each of the laboratory techniques (e.g., Enzyme Linked Immunosorbent Assay (ELISA), Indirect Immunofluorescence Test (IF), Nephelometry), 80% found unaware and unable to explain in details the different between those techniques.

**Quality of Medical laboratory Technology Graduates**

Elements	%	Comments
Lack of Laboratory Reception Skills	70%	Main laboratories
Lack of Team Work Skills	50%	Sharing Informations & Experience
Less Interest in Job	50%	Less care on Job Completion
Constant Inquiry on Job Allowance	60%	Motive Analysis
Lack of Work Ethics	50%	Dismissed Work Duties
Unaware of Types of Laboratory Tests	60%	7 Types

Note: The above percentages are an approximate estimation obtained from the selected senior supervisors at the health sector.

Selected supervisors at the health sector stated that 70% of the CHS have insufficient knowledge and skills regarding laboratory reception job specifications and requirements. Also, unaware (60%) of the types of laboratories at hospitals and the specialization and connection of each of the laboratory related to hospitals departments. Work ethics need to be taught in more details at the CHS, since 60% show unacceptable attitudes towards work commitments and 60% are uninterest in being a laboratory specialist.

### **5.13 Examining the perception of the health sector regarding the quality of graduates from The Department of Oral and Dental Health at the CHS.**

In respect to the Department of Oral Dental Health, the research revealed that since 2017 only (45) students have been graduates, out of which, only (3) graduates been employed in the health sector. And one graduate has been employed in the private sector. The research also showed that efforts has been exerted to encourage Kuwaiti students to enroll in such highly demanded specialist, but unfortunately, the attendance is far below the expected numbers. Now, there is only (31) students who are registered and no guarantee that they would be interested in working at the health sector in the foreseeable future.

## **6. Discussion and Conclusions**

Kuwait as one of the gulf states (e.g., United Arab Emirates, Bahrain, Oman) suffer from a clear shortage of skilled and semi-skilled indigenous manpower. As a result, the dependence on expatriate is highly noted in various sectors of the economy. For example, expatriate form approximately 88.5% of the United Arab Emirates population, 70% in Kuwait, and 53% in Bahrain. The Kuwaiti government has realized the importance of enhancing national capabilities, particularly in essential sectors of the country's economy (e.g., oil, electricity and water, health). Key figures in Kuwait have exerted efforts in tackling the shortage of national

manpower and decided to forge the Public Authority for Applied Education and Training which has five colleges and eight training centers. The College of Health Science, CHS, has been forged in 1974 under the umbrella of the PAAE&T. The main objective of the CHS as stated in the Web. Site of the college is “Rehabilitation of the college graduates to work in hospitals, medical centers, pharmacies, pharmaceutical factories, and many state institutions in the fields of environment, safety and industrial health, and work to provide qualified, distinguished and appropriate scientific and technical cadres to meet the needs of the labor market in all specialized fields without the need for additional training programs”. It is worth mentioning, that managing a technical and vocational education institution is entirely different from managing a formal education institution (e.g., academic colleges and universities). It is dual system of education that embodied theory and practice. It is an education that would provide students with the opportunity to spend a certain time in industrial premises to observe and practice in a real work environment. In fact, it is a crucial for students to learn and practice what they have been taught at the college and convert it into action in work place. The success of technical and vocational education would depend on the type of management. In other word, a Ph.D. holder, in most cases, is not considered as the key of success for managing a dual system of education. In the case of the CHS, it is obvious that management skills are not taught as one of the specialties offered at the CHS for obtaining a management degree. As a result, the lack of professional knowledge and skills is inevitable. It is understandable that selected head of departments may lack management knowledge and skills that would enable them to set a realistic and achievable objective and aims to enhance the quality of the graduates. In fact, it is highly expected that the selected departments may lack the skills that enable them to set a plan that encompasses those objectives related to the reduction of dependence on expatriates in the health sector. The selected departments have not yet estimated the numbers of skilled and semi-skilled that are required by the health sector nor the type of current and future expectation of the level of knowledge, skills and attitudes to meet the rapid change in science and technology. The interest of data bank is one of the most important aspect of technical and vocational education. The selected departments found to experience difficulties in providing the number of students registered in their department. The author struggled to obtain the right number of students registered in each of the selected departments and decide after more than one attempt to rely on those numbers of registered students that are published by the central statistical office at the Kuwaiti Ministry of Planning. Another obstacle was when the selected head of departments at the CHS being asked to assess in providing the names and contact telephone numbers of those supervisors at the health sector who either monitor and evaluate the CHS students during field training program and those supervisors who are in direct contact with the CHS graduates. Regrettably, the selected departments at the CHS have lack sufficient record for such important information. The author exerted efforts in allocating a source of information who kindly facilitate and provide the names and telephone contact numbers of those supervisors in the health sector who are in direct contact with the CHS students and graduates.

The importance of field training program, apprenticeship, is highly discussed in related literature. In fact, all who tackle technical and vocational education have agreed on the significant role of apprenticeship in shaping students’ knowledge, skills and attitudes. It is considered as a “gate” to the world of work. However, the findings of this research showed, according to those selected supervisors in the health sector, that students lack an essential knowledge, skills and attitude related to their field of specialization. In fact, selected supervisors in the health sector stated that “similar students from Kuwait University are more acceptable in the level of knowledge, skills and attitudes comparing to those from the CHS”. Selected supervisors in the health sector also stressed on students’ unacceptable attitude while attending

filed training program. As stated by two of the senior supervisors who both spend more than 30 years in the health sector that “students considered field training program as a vacation and a rest from classes at their college”. They added “strict monitoring of students attendance, participation, and evaluation must be applied to students at the CHS from the first semester”. They emphasize on applying strict requirements for attending the College of Health Science.

In respect to measuring the quality of graduates from the Department of Pharmaceutical Sciences at the CHS, selected senior supervisors at the health sector were found unsatisfied with the standard of the CHS graduates. The majority of graduates lack a thorough understanding and appreciation of the concept of caring for patients and probably patients relative. This was worsening by the irresponsible behaviour of 60% of those who showed minimal responsibility about their career. The majority of the CHS graduates (60%) lack of unawareness of drugs interactions and dealing with medical raw materials when preparing a specific medicine. The research confirmed that 65% of graduates lack an obvious skill in checking medicine inventory as well as ensuring the availability of the right number of medicines. In fact, graduates (60%) ignore or probably unaware on the importance of checking and removing expired medicine. It is also notable that graduate’s inability (70%) to use computer medical software to store or retrieve doctors or patient’s data in an efficient manner.

There is a significant evidence that graduates from the Department of Medical Laboratory Technology (50%), lack an essential knowledge regarding the concept on patients care. The link between the CHS and the health sector seems to be below the expected standard since 90% of graduates were unfamiliar with the types of medical apparatus at work place and showed inability (60%) to conduct simple procedures such as blood test or effective using of pipetting. Selected supervisors at the health sector stress on the need of enhancing graduate’s knowledge and skills in applying a strict safety and health procedures. In addition, to, improving the quality of English language (70%) skills, which are considered essential to communicate effectively with foreign doctors, nurses, technicians, and physicians. Indeed, this would enable graduates to follow up new laboratory practice and techniques and enrich their knowledge with the new inventions in laboratories apparatus in the world. Selected supervisors at the health sector emphasize on the issue of medical terms that needs to be stressed by the CHS, since 50% of graduates lack basic medical terms related to their area of specialty. The CHS required to enrich their students with Lab Information System, LIS, and Hospital Information System, HIS, in order to allow graduates to store and retrieve essential data related to patient’s health conditions and laboratory results. In addition to, retrieving data for further examination or investigation. It is inevitable that graduates lack basic procedures such as conducting accurate Dilution Factor 1-5 test, since the majority of graduates (80%) show less competence in carrying such significant test. A notable graduate’s weakness (90%), in understanding and performing preanalytical, analytical, and postanalytical procedures.

It is essential that graduates from the CHS to understand and absorb the concept of health care and understand crucial skills to ensure providing the best health care for patients, relatives, and the society. The accuracy of interpreting laboratory results is highly significant for patient’s well-being, since 90% of graduates unable to use un-updated computer software for further analysis and interpretation of laboratory results. Safety and health procedures are essential and critical in laboratory environments which expose to bacteria and viruses and other life threatening hazards. Graduates (50%), are required to carefully transfer laboratory sample to prevent any damage or causing interference with the originality and safety of the laboratory sample. Selected supervisors stressed on the need to enhance graduates with interpersonal skills that enable graduates to deal with work stress, cope with working in a dangerous environment, and managing doctors and patients’ frustration. Selected supervisors at the health sector stated

that 70% of the CHS have insufficient knowledge and skills regarding laboratory reception job specifications and requirements. Also, unaware (60%) of the types of laboratories at hospitals and the specialization and connection of each of the laboratory related to hospitals departments.

In respect to the Department of Oral Dental Health, the research showed that efforts have been exerted to encourage Kuwaiti students to enroll in such highly demanded specialist, but unfortunately, the attendance is far below the expected numbers. Now, there is only (31) students who are registered and no guarantee that they would be interested in working at the health sector in the foreseeable future.

The CHS must stress on enhancing graduate's knowledge, skills and attitudes in various area related to their career. Among the skills which need to be enhanced are: ability in understanding and interpreting doctors' writings, communication skills particularly with patients, respect work practice, stressing on work loyalty, enhancing work ethics, understanding how to prepare a medicine, medicine registration and documenting, strict examination scheme during studying at the CHS and while attending field training program, strict examination before enrolling at the CHS, ensuring sincere willingness to work as a pharmacy specialist, and communicating in English language. Selected supervisors urge the CHS to forge a strong linkage in order to review and assess the quality of the CHS graduates and establish a strict examination scheme that both parties (health sector and the CHS) can assess the progress of students starting from the first course of enrolling at the CHS. The CHS must ensure that graduates maintain high standard as patient's privacy is one of their priority tasks. Others must be aware of patient's illness such as HIV or desperation since this would have a significant side effect of patient's health and reputation. According to one of the senior supervisors at the health sector "nearly half of the CHS graduates lack basic knowledge and skills that are needed by the health sector". He blames the CHS for accepting students who their attitudes are not in interest in working at health sector nor in exert efforts to improve their skills. In addition, the lack of communication skills and interpretation of English medical terms is highly noted in students while they are on field training program.

Indeed, the lack of skilled and semi-skilled in essential sectors, including the health sector, is visible and created a challenge for decision makers in Kuwait. The establishment of the CHS is to enhance indigenous capabilities and tackle the shortage of skilled and semi-skilled staff in one of the significant sectors of the Kuwait's economy (health sector). The believe that the CHS would contribute significantly in reducing dependence on expatriate is, to great extent, considered unachievable at the current time. The findings of this research revealed several deficiencies that characterized the performance and contribution of the CHS is providing the health sector with the needed national manpower. Unless the management of the CHS realized and apply a new management philosophy that emphasis on forging a strong linkage with the health sector no tangible satisfactory outcomes would be expected. The management of the CHS are advice to enrich their management knowledge and skill. Technical and vocational education is entirely a dual system that require a unique type of management style and philosophy that are capable of interact efficiently with the recipient of the students either in improving the standard of field training program or enhancing the quality of graduates. The continuing of widening the gap between the CHS and the recipient of its graduates would indeed place a heavily burden on the shoulder of those aiming to reduce dependence on expatriates. Thus, the country would continue, without doubt, to depend on expatriates for year ahead.

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