

AN INVESTIGATION INTO CONTINUOUS PROFESSIONAL DEVELOPMENT
PRACTICES AMONG BIOMEDICAL SCIENTISTS: A CASE STUDY OF SELECTED
LABORATORY AND HEALTH FACILITIES IN THE ASHANTI REGION

By

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DECLARATION

I hereby declare that this submission is my own work towards the CEMBA and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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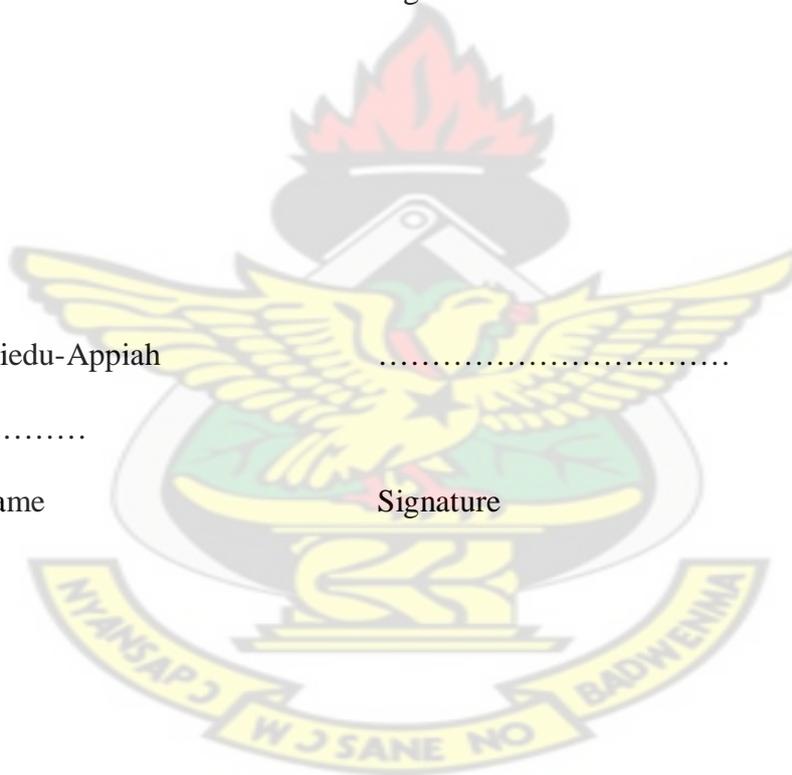
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ABSTRACT

Continuous professional development (CPD) is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives. Participation in CPD matches up the lab scientist to the ever changing challenges in the health sector. The objective of this study is to investigate CPD activities and practices among laboratory scientists in the Ashanti region, Ghana.

Seventy-eight (78) medical laboratory professionals participated in the study. Questionnaires were administered to the participants and the continuous data were analyzed using the t-test, while categorical data were analyzed using the Fisher's exact test or X^2 for trend. The study showed, 80.8% had participated in CPD activity in the last 12 months of work while 19.2%, had not. The study also showed 84% and 71% incidence participation in CPD activities for males and females respectively. The lack of a policy guideline (35%), lack of adequate funding (30%) and the neglect of laboratory profession (17%) were identified as barriers for implementation of CPD activities being barriers to bringing CPD activities to fruition. Based on the findings of the study, it is recommended that human resource (HR) managers adopt less expensive routes for CPD program to enable wider coverage for CPD participation for its members. The HR department should ensure the provision of logistics for CPD, like computers to enable online CPD programs which are easy and cheaper to develop the professionals. The study recognized the role of professional and regulatory bodies of some association and recommends the lab association to be involved similarly.

DEDICATION

I dedicate this project work to my caring father, Rev William K Ofofu and mother, Mrs Rebecca Ofofu, who dedicated their whole lives supporting me, to my siblings, and to my wife, Rosemary and children David Jnr, Daisy and the unborn child.

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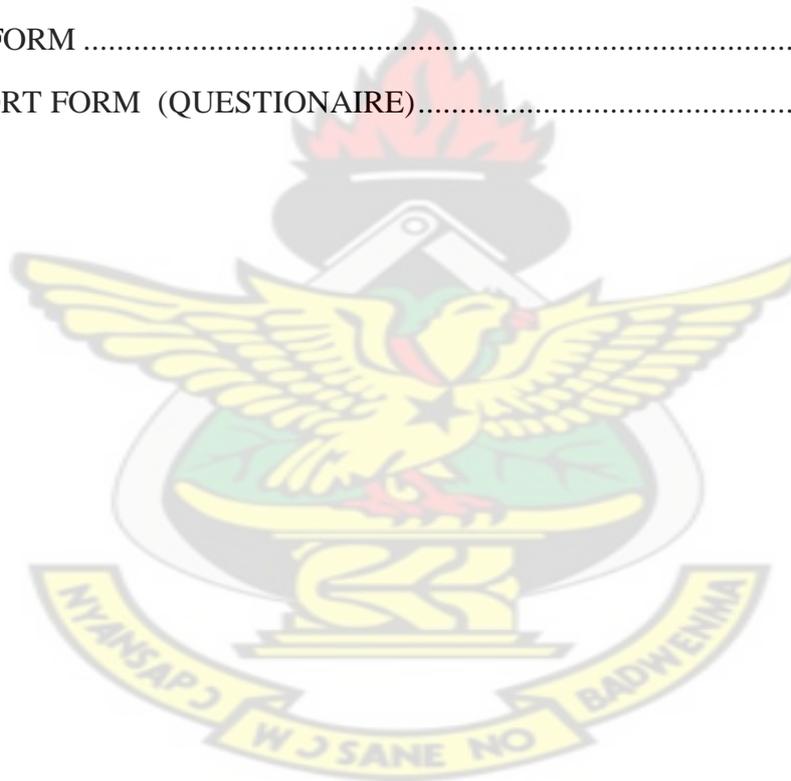
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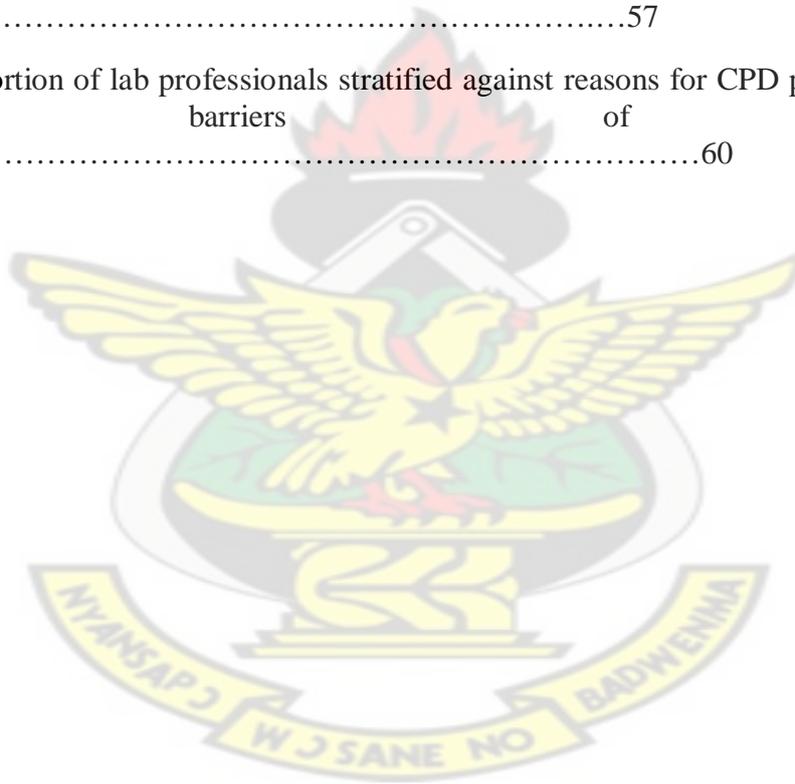
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LIST OF ABBREVIATIONS

BLS: Biomedical Laboratory Scientist

BMS: Biomedical Scientist

CI: Confidence Interval

CPD: Continuous Professional Development

CPE: Continuous Professional Education

GHS: Ghana Health Service

INTCPE: International Related/Organized Continuous Professional Education

IHCPE: In-house Continuous Professional Education

J SUB: Journal Subscription

PJ SUB: Paid Journal Subscription

MOH: Ministry of Health

NGO: Non Governmental Organization

NRCPE: Non Related Continuous Professional Education

OCPE: Online Continuous Professional Education

S.D: Standard Deviation

S.E.M: Standard Error Of Mean

SPSS: Statistical Package for Social Sciences

WHO: World Health Organization

CHAPTER ONE

INTRODUCTION

1.0 Background

The role of human resources is to address hiring, performance and staffing requirements. Each of these involves a level of knowledge, skills and abilities that are provided through education. Human resource departments provide information about the organization's policies, procedures and benefits. An employee's certifications are held in her human resource file. In some organizations, this is also the department that schedules workshops, lectures and events for staff. Continuous professional development is a must for all professionals (DiMauro, 2000, Konkol, 2005).

According to DiMauro, (2000), knowledge, skills, and abilities can be defined through workshops, trainings, and certifications that are pursued in addition to educational degrees. The role of human resources for any organization is to track employee's continuing education credits. Many positions require continuing education credit to maintain certification in their field. Compliance with certification of employees falls to the human resource office (Comeau, 1998).

Employees who wish to stay with their organization can take advantage of courses offered in their field as professional development training. Skill sets like computer trainings, marketing, quality assurance and control procedures, laboratory diagnostics or management courses are provided to retain personnel and promote from within.

CPD is the means by which members of the professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives (Chartered Institute of Personnel and Development guide, 2010).

CPD is can therefore be defined as a commitment to structured skills enhancement and personal or professional competence (Egan J., 2010). CPD can also be defined as the conscious updating of professional knowledge and the improvement of professional competence throughout a person's working life. It is a commitment to being professional, keeping up to date and continuously seeking to improve. It is the key to optimizing a person's career opportunities, both today and the future (Chartered Institute of Personnel and Development guide, 2010).

Health workers are people whose job it is to protect and improve the health of their communities. It is widely acknowledged that health workers, as an integral part of health systems are a critical element in improving health outcomes and that, without sufficient numbers of adequately trained and supported health workers; there is a significant risk of not attaining the health-related Millennium Development Goals (MDGs). (“WHO | The World Health Report 2006 - working together for health,”) One significant health profession under the Ghana health sector is the biomedical laboratory scientists.

1.1 Medical Laboratory Scientist

A Medical Laboratory Scientist (MLS) is a healthcare professional who performs chemical, hematological, immunologic, microscopic, and bacteriological diagnostic analyses on body fluids such as blood, urine, sputum, stool, cerebrospinal fluid (CSF), peritoneal fluid, pericardial fluid, and synovial fluid, as well as other specimens. Medical Laboratory Scientists work in clinical laboratories at hospitals, doctor's offices, reference labs, and biotechnology labs (University of London, 2010).

In Ghana, the degree MLS is referred to as the Biomedical Laboratory Scientist, the certificate holder is known as the lab technician while those who learnt the profession on the bench are known as the laboratory assistants.

The large numbers of health workers in the world make up an important part of the total labour force. In general, the relative importance of the health workforce is higher in richer countries than in poorer ones and can account for up to 13% of the total workforce. (WHO report, 2006)

In the study conducted by Victoria Tchaghchagian and Diana Jamal (2009); assessment of human resources development practices in Lebanese hospitals it was reported that, the lack of qualified personnel (35.1%) ranked second in the most recorded challenge whereby respondents reported that there are few candidates for specific positions in their hospitals. This cripples the hospitals' ability to provide quality care, as existing staff members cannot assume these roles due to lack of continuous education and/or training. The lack of person/job fit may thus impede the hospitals' ability to provide certain services or meet national hospital accreditation requirements in Lebanon. (El-Jardali, Tchaghchagian, & Jamal, 2009)

Major advances in Medicine and health care continue to be made. The implementation of these are dependent on health professionals learning how new techniques, diagnostic tests, new drug formulations, therapies, clinical care and concepts can improve the quality and safety of care they provide for patients.

In this new century – characterized by an accelerating pace of change, increasing complexity, an unprecedented growth in information, and ever-increasing societal expectations, it is essential that health professionals are supported in their continuing education, from school to

retirement. Supported in this way, and entrusted with this responsibility, health professionals will be more able to apply the beneficial effects of education, thus developing and improving their diagnostic knowledge skills and performance.

In addition to contributing to improvements in the care of individual patients, CPD also plays an important part in improving the quality of healthcare systems. This is through increasing health professional's awareness of the need for, and how to achieve improved healthcare.

Some school of thought believes that CPD isn't a fixed process, although there may be laid down, certain basic processes. But fundamentally, it may be a question of setting one's self to fulfill the objectives for development and then charting one's progress towards achieving them. It's about where the health professional wants to be, and how they plan to get there. (University Of London, 2010)

There is the need therefore to assess the level of availability and awareness of health professionals to CPD which will be the match up to the ever changing phase of disease presenting in our hospitals in recent times. To enable hospitals to deliver good quality, and safe healthcare; improving HR management is critical. There is a need for a cadre of competent HR management who can fully assume these responsibilities and who can continuously improve the status of employees at their organizations to meet the challenges of today (El-Jardali et al., 2009).

1.2 Problem Statement

CPD is the systematic maintenance, improvement, and broadening of knowledge, skills and competence throughout a professional's working life. This is for individuals to remain

employable in the competitive workplace and to produce a competent, adaptable workforce. The public is also reassured of the maintained practice and the upholding of standards of the lab professional. The Laboratory scientist at Komfo Anokye Teaching Hospital, KATH, Ghana Health Service, GHS and the private institutions play an important role in the evidence based medicine. Without their services, the clinician will only treat their patients on suspicion. In order to carry out their activities efficiently and effectively, the lab scientist's knowledge, skills and abilities need to be constantly updated. In an era of rapid change in technology and the science of treating ailments, it is imperative the lab scientist, who aid in the diagnosis of diseases, go through continuous professional development.

However, while most lab scientists are unaware of the presence of CPD activities in their various facilities, those who are aware are unable to access these opportunities. Over the years, much emphasis has not been placed on building the capacity of lab scientists despite the critical role they play in health care delivery. This is due to inadequate allocation of funds and lack of policy guideline

In some institution the laboratory profession on the whole has been sidelined by the clinicians and administrators of the facility such that, not much attention is given to the progression of the lab profession in their career development. It therefore makes it seem like there are no professionals at work at all. This study is therefore important to investigate the CPD activities currently in place, to look into the ease of access to these CPD activities and the challenge that has prevented this important human resource activity from fruition.

1.3 General objective

To investigate into human resource management activities through, continuous professional education practices among laboratory scientists in the Ashanti region.

1.4 Specific Objectives

1. To evaluate the level of awareness of CPD at selected health facilities in the Ashanti region
2. To evaluate the availability and ease of access to CPD by lab scientist in the selected hospitals
3. To identify the challenges to CPD participation by lab scientists in the selected hospitals.

1.5 Research Questions

1. What is the level of awareness of CPD among lab scientists in the selected health institutions in the Ashanti Region?
2. Are CPD programmes available to lab scientists in the selected hospitals?
3. Do lab scientists in the selected hospitals have easy access to CPD programmes?
4. What challenges are faced by lab scientists with regards to their participation in CPD programmes in the selected health facilities?

1.6 Significance of the study

The tool to matching up health professionals, being able to diagnose, treat and discharge their clients from disease and ailments that befall them is continuous education. This needs to be conducted mostly by the human resource department to strengthen the diagnostic ability of the health worker, in this case, the laboratory scientist.

Human Resource Development is one most important activity and plays a vital role in HRM of an institution. The outcome of the study would bring to light the current practice of HRD in the selected hospitals in the Ashanti region. This should improve the capacity of human

capital of these hospitals and enhance health development in the country at large. The knowledge discovered would improve productivity in the diagnostic sector (Library Junction, 2011)

Unfortunately, the lab profession has little or no recognition for its role in the Ghana Health Service delivery system. Human resource development departments have failed to give the profession, the needed attention to continuous education and professional development.

The structure in the Ministry of health, Ghana has supported this posture in a long while.

It is against this background that this study became significant to consider, and to look into the current continuous professional education practices among biomedical scientists in the Ghana Health Service and the Teaching Hospital in the Ashanti region in respect to the role of the human resource department.

1.7 Overview of research methodology

Cross-sectional study method was used. A total of 100 medical laboratory professionals are in the Ashanti region, with about 60% of them in the Kumasi Metropolis, Komfo Anokye Teaching and surrounding hospitals, clinics and private laboratories. 60% of the sample populations in each facility were considered for the study. This was to ensure that more than half of the sample population is enrolled into the study.

Questionnaires were administered participants and information for our objectives were obtained. For the purpose of the study, respondents were not identified by names but coded numbers to ensure anonymity. Data on age, sex, place of professional practice, length of service among others were included in the questionnaire. Questionnaires were administered by principal investigator and two trained field workers for the purpose of the study.

Data entry were done using Epi Info software while graph pad and the Statistical Package for Social Scientists, (SPSS) were used to analyze the data.

1.8 Scope of the study

The Study included laboratory scientists working under the Ministry of Health, Ghana both in the Ghana Health Service and the Teaching Hospital in the Ashanti region. The study was limited by the geographical coverage it could reach, due to inadequate funds; hence this sample represented over 60% percentage of the study population of biomedical laboratory scientists in Ashanti region of a total over 100 laboratory professionals.

1.9 Organization of the study

Chapter 1 represented the framework of this study and has been structured to gain insights into the practice of human resource development of the Ghana Health service and KATH. It included the background to the study, what has prompted the study, the problem statement, the objectives to be followed to achieve the said goals and the overview of how the entire study will be conducted. A brief outline of each of them is given below: Chapter 2 represented the literature review which relates to the study of the previous studies on this topic. This chapter primarily included what continuous professional development was, what biomedical science profession is about and its role in the health sector in relation to the effect CPD present or absent has had of the diagnostic capacity of a laboratory professional in Ghana which constitute the central part of this research. Chapter 3 establishes the method adopted to carry out this study, the criteria of selection of participants for the study and the usage of quantitative approach for this particular research. Chapter 4 reveals the analysis and interpretation of the responses which were collected from the questionnaires. A wide range of sub-topics under this theme will be touched upon finding out if some of the results are consistent with the literature review and some opposing. Chapter 5 is related to the final

conclusion where all the findings from the research will be summarized and the recommendations made. It will also state an area appropriate for future research and finally divulge the managerial implication which would facilitate in a better management of the human resource the health service particularly, of the biomedical laboratory scientist.

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CHAPTER TWO

LITERATURE REVIEW

2.0 Human Resource Management (HRM)

An organization's human resource management should maximize return on investment in the organization's human capital. Human resource managers seek to achieve this goal, by aligning the supply of skilled and qualified individuals and the capabilities of the current workforce, with the organization's ongoing and future business plans and requirements to maximize return on investment and secure future survival and success.

In ensuring such objectives are achieved, the human resource function is to implement an organization's human resource requirements effectively, taking into account national, regional and local labor laws and regulations; ethical business practices; and net cost, in a manner that maximizes, as far as possible, employee motivation, commitment and productivity (Comeau,1998)

2.0.1 Key Functions of HRM

Human Resources may set strategies and develop policies, standards, systems, and processes that implement these strategies in a whole range of areas. This includes: Recruitment, selection, and on boarding (resourcing), Organizational design and development, Performance conduct and behavior management, Industrial and employee relations. Others includes human resources (workforce) analysis and workforce personnel data management, compensation and employee benefit management, training and development (learning management), employee motivation and morale-building (employee retention and loyalty)

Implementation of such policies, processes or standards may be directly managed by the HR function itself, or the function may indirectly supervise the implementation of such activities by managers, other business functions or via third-party external partner organizations.

2.1 Human Resource Development (HRD)

Beardwell and Holden (1998), hold the view that many professionals are required to undertake continuous professional development, CPD because the previous skills they had acquired for their initial practice are antiquated and not meeting the current trends of challenges. According to Kelly (2000), HRD is the strategy to adopt. It is defined as developing the most important section of any business, its human resource, by attaining or upgrading employee skills and attitudes at all levels to maximize enterprise effectiveness.

CPD is more than updating your skills but calls for a continuous process of learning which is likely to have considerable benefits for the professional individual and the organization at large. Development occurs to enhance the organization's value, not solely for individual improvement. Individual education and development is a tool and a means to an end, not the end goal itself (Elwood F. Holton II, James W. Trott Jr). Whitaker (1992) mentions that CPD is the insurance that provides the professional the skills and knowledge to remain up to date in an ever changing world, enhancing the reputation of the profession, ensuring that they are committed to learning as part of their work and to encourage them to look up to improved and enhanced performance. Whitaker also mentions as a principle underlying CPD, that career development should be owned and managed by the learner.

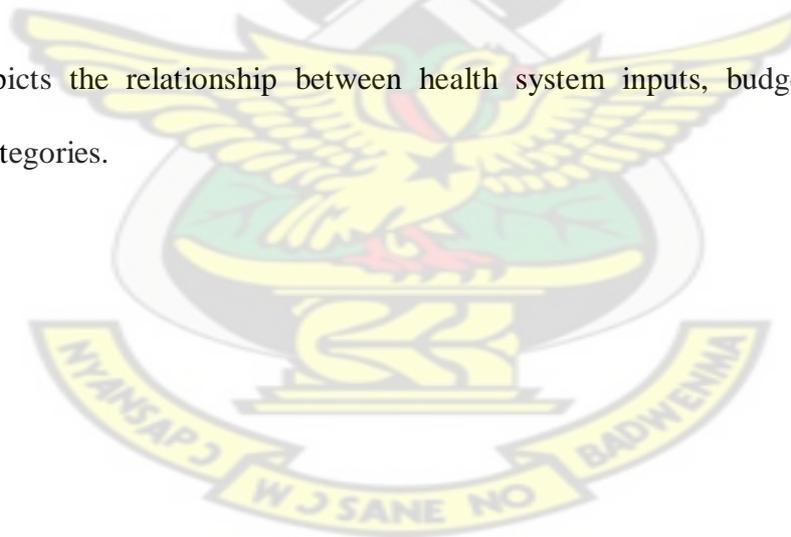
2.1.1 Human Resource Development in Health Care

Human resources, when pertaining to health care, can be defined as the different kinds of clinical and non-clinical staff responsible for public and individual health intervention. As arguably the most important of the health system inputs, the performance and the benefits the system can deliver depend largely upon the knowledge, skills and motivation of those individuals responsible for delivering health services (Kabene et al., 2006).

2.1.2 Training and continuous development

Within many health care systems worldwide, increased attention is being focused on human resources management (HRM). Specifically, human resources are one of three principle health system inputs, with the other two major inputs being physical capital and consumables.

Figure 2.1 depicts the relationship between health system inputs, budget elements and expenditure categories.



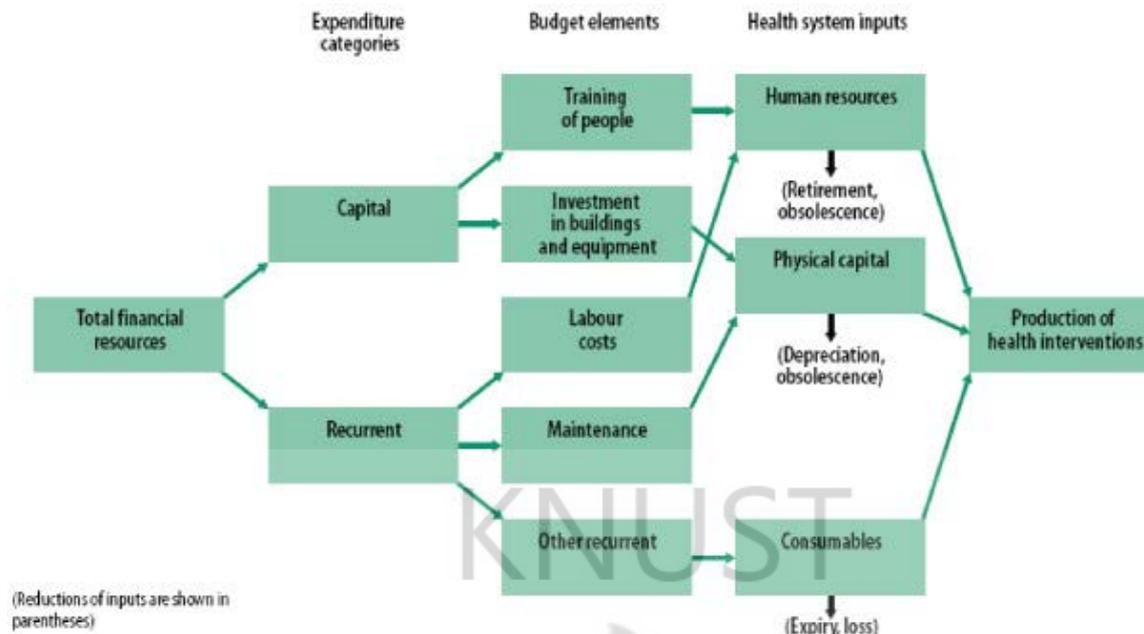


Figure 1 Relationship between health system inputs, budget elements and expenditure categories. Source: World Health Report (2000)

The relationship between health care expenditure and health outcomes is of interest to policy makers in the light of steady increases in health care spending for most industrialized countries (Nixon & Ulmann, 2006).

However the cost, the nation's economic growth depends on the productivity of its healthy citizens. A healthy citizenry will also depend on quality of care from the health worker, whichever finds itself in the value chain to providing the health service delivery.

The lab scientist plays a vital role in diagnosing a disease condition to assist the clinician/doctor, nurse, pharmacist and all other service providers in the value chain/in the team in providing therapeutic remedy to the patient.

At the organizational level, a successful Human Resources Development program prepares the individual to undertake a higher level of work, "organized learning over a given period of time, to provide the possibility of performance change" (Nadler 1984).

In these settings, Human Resource Development is the framework that focuses on the organization's competencies at the first stage, training, and then developing the employee, through education, to satisfy the organization's long-term needs and the individual's career goals and employee value to their present and future employers.

The people within an organization are its human resource. Human Resources Development from a business perspective is not entirely focused on the individual's growth and development; The broader concept of national and more strategic attention to the development of human resources is beginning to emerge as newly independent countries face strong competition for their skilled professionals and the accompanying brain-drain they experience. (Comeau, 1998)

According to Kraut & Korman, 1999, major changes have occurred in organizations in the last 20 to 30 years as a result of increased global competition and rapid technological changes. These changes are evident in the large scale “restructuring” or downsizing of many firms and their subsequent hiring of contract or contingent workers to fill specified needs as organizations seek to keep operating and training budgets get lean (New York Times, 1996).

There are two perspectives on these changes. From the employee perspective, there has been a decrease in employers' commitment to retain employees (Robinson & Rousseau, 1994) and there has been a shift in responsibility for learning from organizations to individuals (McCauley & Hezlett, 2001). Both of these have meant that employees need to take greater personal responsibility to ensure their skills are current and/or marketable (Arnold, 2001).

From the organizational perspective, adaptive workers are highly desirable and the increasing number of temporary and contract employees demonstrate that pre-trained workers

are often the ideal (Hall and Mirvis, 1995, N. Anderson et al, 2001, McCauley and Hezlett, 2001)

From both of these perspectives, though, employees are the most valuable to employers when they are engaging in ongoing employee development and when this development is proactive or self-motivated (Han & Williams, 2005).

2.1.3 Difference between Continuous Learning and Continuous Development

Distinguishing learning and development is important because, although they are similar terms, the differences between them make development a more precise term to use in labeling the motivation to engage in ongoing employee-related growth.

Merriam-Webster Online (2005) defines learning as the gaining of knowledge, understanding or a skill. It can be conceptualized as both a process and an outcome. However, it is largely a static concept, as terms like continuous learning and lifelong learning demonstrate; if learning implied an ongoing process then the term continuous learning would be redundant. Instead, continuous learning is defined as directed and long term effort to learn, desire to acquire knowledge and skills, and participation in activities that facilitate learning (Noe & Colquitt, 2001).

In contrast, Merriam-Webster Online (2005) defines developing as the “process of natural growth, differentiation, or evolution by successive changes”, and development as “the act, process, or result of developing”. So development can also be conceptualized in terms of an outcome, but it is easier to talk about a single act of learning than a single act of development because development is more commonly conceived of as a process. Because development implies an ongoing process more than learning, this makes it a better term for labeling the motivation process.

The term continuous employee development then further specifies the development of interest, namely development from learning activities that will enhance employment-related knowledge and skills. The word continuous is used in addition to development to emphasize that the development process is on a reoccurring basis and that it remains employee-related. Thus, we define continuous employee development as a cyclical process in which employees are motivated to plan for and engage in actions or behaviors that benefit their future employability on a repetitive or ongoing basis.

Continuous employee development can also be differentiated from three specific learning concepts: lifelong learning, continuous learning, and self-directed learning.

Lifelong learning is not the same concept as continuous employee development because the two differ in breadth. Lifelong learning is defined as all learning activity taken throughout life with the aim of improving knowledge, skills, and competencies within a person, civic, social and/or employment perspective (European Report on Quality Indicators on Lifelong Learning, 2002). It is not specifically focused on employee development and it is not restricted to employee-motivated behavior. Therefore, as a concept, it does not specifically address how and why employees are motivated to engage in ongoing employee-related development.

In contrast, continuous employee development restricts its focus to the portion of an individual's life in which they are interested in engaging in some form of employment.

Similarly, continuous employee development is also not the same concept as continuous learning, under the definition by Noe *et al.* given above, because the latter is not restricted to employee-related development. Alternate definitions provide further distinctions, for instance, “continuous learning is the process of development in which planning, learning, and

applying new knowledge and skills occur in changing organizational conditions” (Han & Williams, 2005). Not only does this definition seem to conflate learning and development, it is arguably restricted to learning regarding one's present position. In contrast, continuous employee development can involve development for current or future unrelated positions, where no application would have yet occurred.

Continuous employee development can also be differentiated from self-directed learning because this term is also not restricted in focus to employee-related development. Self-directed learning is a term from the educational literature and can refer to both an instructional method and a personality dimension (Brockett & Hiemstra, 1991).

Humans learn and develop from birth and this learning and development leads to man being well adapted to his environment (Ribeaux and Poppleton, 1978). The society or the environment also helps to shape the activities of men so that they yield outcomes that are acceptable to it.

2.1.4 Forms of CPD programs

Professional development for faculty in higher education takes many forms, from self-directed activities to organized programs of learning. Different kinds of employee development behaviors have been identified by different authors, though three general categories can be discerned from these (Lans et al., 2004 and Noe et.al., 1997).

Individuals can engage in formal job training, informal job training, and other-job related learning.

Formal job training includes any structured learning activities directly pertaining to learning current-job related skills including corporate sponsored or private institutional classroom

training or structured on-the-job training programs. It could also include the collection and provision of feedback from others on job performance. Informal job training can include mentorships, job rotation or enlargement, seeking challenging job assignments, or joining professional societies. That is, any unstructured learning opportunity that promotes new knowledge and skills pertaining to one's present position. Other-job related learning could be more or less formal, for example, classroom learning to help start a new career path, or enhance one's leadership and speaking skills, or it could involve learning a new language through self-study at home. Even employment-related discussions with co-workers and development-related surfing on the Internet would qualify (Lans et al., 2004 and Noe et al., 1997).

2.1.5 Reasons for CPD

The need to train and develop employees, has now taken credence such that managers not only have to acquire appropriate people to resource their institutions but invest in them to achieve and maintain the survival and success of the organization (Beardwell and Holden, 1998). The reasons they assigned to their assertion are that:

New employees have to be processed to be able to perform their functions adequately, the job functions may change with time and that they need to match up to the changes, the employees interest and aspirations may change and that they would need development in that direction. Also due to competition in the business environment, new strategies and techniques will need to be applied and this requires CPD.

Beardwell and Holden (1998) added that, to ensure effectiveness in CPD, selection and supervision must be effective as well as an appropriate management style, the opportunity to

transfer learning to the workplace, career paths and promotion possibilities, appropriate incentives and rewards.

2.1.6 Factors Affecting Selection of CPD programs

Noe and Wilk (1993), theorized that employees' beliefs about whether development activity would result in favorable outcomes, would influence their motivation to participate in developmental activities. It was a mediator in their model between personal and work characteristics and development activity.

A study conducted to identify what factors pharmacists take into consideration when selecting a continuing education (CE) program, selected the characteristics of a program as the factor to consider when developing a program, as participants felt that this was their most important consideration of CD program selection. Less focus was brought to variables such as workplace setting, degree, financial support, age, and number of years in practice, as these did not affect CD selection (“allbusiness.com,” 2011).

2.1.7 Barriers to CPD participation

Curran et al. (2006), in their study conducted found that, geographic isolation and poor technological and telecommunications infrastructure were key barriers to CPD delivery and access. Financial factors, such as funding to support travel or cost of attendance, were also identified as major challenges. Tele-education programming was identified as a best practice approach to improve CPD access, as were regional CPD activities and self-directed learning programs. Employer-sponsored initiatives, including staff coverage or locum support, remuneration for time off and paid travel expenses for CPD participation were also identified as best practice approaches.

Significant blocks to learning are identified by Mumford (1988) such as perceptual, cultural, emotional, motivational, intellectual, physical, expressive, situational and the specific environment.

The pharmacy profession recognizes the need for continuing development (CD), however, the rate of participation in organized CPD remained low. Barriers identified in the study conducted includes time constraints, accessibility – in terms of travel and cost, relevance, motivation, quality and method of CPD delivery (Free Online Library, 2011; AllBusiness.com, 2011).

Although the Internet is an effective and satisfactory educational format, barriers to use of the Internet for CPD still exist (Cobb, 2005).

There is limited access to computers and the internet facility in most towns and villages where these health worker practice in Ghana. Internet knowledge is also reduced, making it a disincentive for health professionals to use internet for CPD.

Although in-person CPD remains the most frequent and most preferred format, Internet CPD is gaining popularity. Most participants who engage in on-line CPD are satisfied with the experience and find it to be an effective learning format. However some barriers to on-line CPD include technical difficulties and lack of computer knowledge (Cobb, 2005).

2.2 The Outcomes and Process Of CPD

According to Beardwell and Holden, (1998) learning could provide outcomes as acquisition of skills, gain competence, “acquire tacit knowledge and gain hierarchies of cognitive and

other skills. The outcome of learning and development is the motivation for the manager to promote his workers for the training.

Beardwell continues to state the following benefits of learning as having both morally acceptable intent and outcome. This included benefits for the individual, the organization and the society.

2.2.1 Benefits for the Individual

Learning according to Beardwell was the key to developing a person's potential, effective learning, meeting the demands of change, and increases employability. It was also established that the capacity to learn is an asset that never becomes obsolete and embracing learning helps the individual to acknowledge that learning is more than formal education training.

2.2.2 Benefits for Organizations

It was shown that, learning increases everyone's capacity to contribute to the success of organizations, everyone becomes more effective in meeting its goals, and staff emancipates the organization through clarification of purpose, vision, values and behavior (Beardwell 2010).

There is also focus on learning, planned and unplanned, formal and informal, and production of a wider range of solutions to organizational issues. Learning helps to achieve a better balance between long-term organizational effectiveness and short-term organizational efficiency.

2.2.3 Benefits for Society

Beardwell continues to mention that, the Society benefits from development of the staff as the society survives and thrives through learning. A focus on capturing and sharing learning

contributes to a more cohesive society and it helps to enhance the capacity of individuals to create a more fulfilled society. Also individual and collective learning reinforces the informed, conscious and discriminating choices that underpin democracy.

2.2.4 Career Development

Individuals in work settings develop concurrently with the organization. While the individual learns within the organization, and everyone does same, the entire organization learns, as the individual's development is enhanced. Therefore, career development is significant to both the individual and the organization in its human resource development.

2.2.5 CPD policy guidelines in the Ministry Of Health, Ghana

The Ministry of health of Ghana has laid down policy guidelines to help implement continuing education among its members. The Ministry of Health has the responsibility of direct provision of public health services delivery in the country. These are the promotive, preventive, curative and rehabilitative care, to the Ghanaian public. With the enactment of ACT 525, this function has been ceded to the Ghana Health Service and Teaching Hospitals. The Ministry is, therefore, left with the responsibility for policy formulation, monitoring and evaluation, resource mobilization and regulation of the health services delivery. Although the Act was promulgated in 1996, there has not been any substantial separation of the functions of the Ghana Health Service and the Teaching Hospitals from the Ministry (MOH-Ghana,2011).

This separation has however brought differences in the policy frameworks directing the resources employed in providing continuous professional education support in the two arms of the ministry of health, (the teaching hospitals and the Ghana health service). There are

imbalances in the CPD activities of staff from the teaching hospitals and the Ghana Health Service.

2.2.6 Training Policy Program For Health Sector

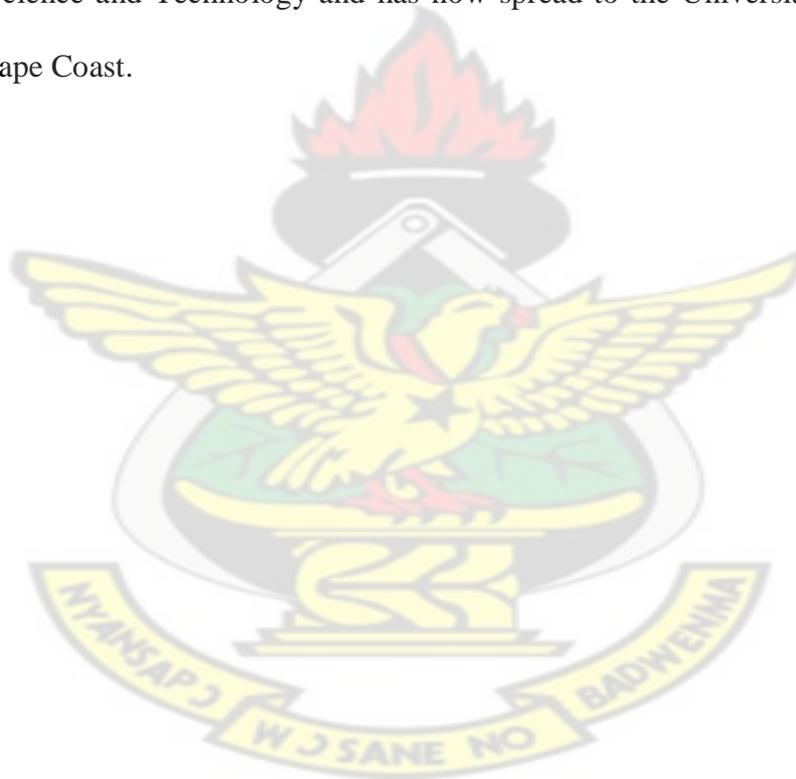
The Ghana Health Service (GHS) considers in-service training as an essential investment in its staff, aimed primarily at improving on performance. It recognizes that continuous updating of the knowledge, attitudes and skills of its staff is an essential feature of maintaining competent professional practice, staff motivation and morale (GHS policy guideline, 2010).

It also acknowledges that new appointees and entrants must be oriented to the vision and culture of the Service. The GHS is therefore committed to institutionalizing In-Service Training and continuous professional development, CPD for its staff. The system put in place by the Ghana Health Service emphasizes on sustained improvement in quality services by nurturing a high level of performance. This is done through CPD programmes that constantly evolve to take into account developments in health and social changes. All types of CPD programmes are based on individual, departmental and organizational needs while off-the-job training programmes will have appropriate mechanisms to ensure transfer of knowledge and skills acquired to the job. Very importantly, the policy guideline mandates that all staffs have at least one CPD that is relevant to their functions every 3 years (GHS CPD policy guideline, 2010). This however is not adhered to or is not being implemented.

2.3 Continuous Professional Development, Past and Current Practices

The usual requirement for an entry-level position as a medical laboratory technologist is a bachelor's degree or one of the life sciences; however, it is possible to qualify for some jobs with a combination of education and on-the-job and specialized training.

Many laboratory workers in Ghana had started as laboratory assistants, until the professional certificate training was introduced in the late 80's. In the later part of 1998, the degree program was started in some parts of the country, particularly the Kwame Nkrumah University of Science and Technology and has now spread to the University of Ghana and University of Cape Coast.



CHAPTER THREE

RESEARCH METHODOLOGY AND ORGANISATIONAL PROFILE

3.1 Introduction

This chapter is comprised of areas which deal with details of the research methods. The chapter consist of research design, the area of the study, the population, the sample and sampling procedures, instrument for data collection and the methods of data analysis.

3.2 Research design

The research design specifies the methods and procedures for acquiring the information needed to structure and solve the research problem (Smith et al., 2010). The overall operational design for this study stipulates what information was collected, from what sources, and by what procedures. A quantitative approach was used in collecting data for the study. The research design ensured that the information obtained was relevant to the research problem, and that it was collected by objective and economical procedures.

3.3 Sources of data

The sources of data used for this study are primary data and secondary sources of data.

3.3.1 The primary source of data

Primary sources are the first hand evidence left behind by participants or observers at the time of events (Storey et al., 1999). A questionnaire is a primary source of data, and this was used for the study to gather information. The data were gathered through structured questionnaires administered to respondents of the study. Some of the questionnaires were sent online while the greater numbers were administered in the form of hard copy for respondents to fill.

3.3.2 The secondary sources

A secondary source is a report on the findings of the primary source. While not as authoritative as the primary source, the secondary source often provides a broad background and readily improves one's learning curve. Most textbooks, internet articles, and journals are secondary sources; they report and summarize the primary sources (Stacks, 2002). Data were obtained from the publications of articles and studies on this subject and reviewed. Most of the sources of secondary data obtained for this study were taken from online articles and a few from textbooks.

3.3 Sample Population/ Study Area

This study was conducted from January 2011 through to April 2011. The population of the study includes all labs in the Ashanti Region. Ashanti is the most populous region in Ghana (<http://ghanaweb.com>, 2011). The region is the third largest of 10 administrative regions in Ghana, occupying a total surface of 24389 square kilometers or 10.2 per cent of the total land area of Ghana. In terms of population, however, it is the most populated region with a population of 3,612,950 in 2000, accounting for 19.1 per cent of Ghana's total population. The Region has eighteen administrative districts, the highest in the country. It is made up of one Metropolitan Assembly (Kumasi metropolitan Assembly) and seventeen (17) other District Assemblies. The Ashanti region also harbors the capital city of Kumasi. The Ashanti region is centrally located in the middle belt of Ghana. It lies between longitudes 0.15W and 2.25W, and latitudes 5.50N and 7.46N. The region shares boundaries with four of the ten political regions, Brong-Ahafo Region in the north, Eastern region in the east, Central region in the south and Western region in the South west. The region is divided into 27 districts, each headed by a district chief executive. The population of the region is concentrated in a few districts. The Kumasi metropolis alone accounts for nearly one-third of the region's

population. Slightly over half, 51.5 per cent, of the population of the region is in four districts. While more than half of the population in the region resides in urban areas, in 15 of the 18 districts, over half the population live in rural areas. The high level of urbanization in the region is due mainly to the high concentration of the population in the Kumasi metropolis (Wikipedia, 2011).



Figure 2: A map of highlighted area showing the Ashanti region of Ghana where this study was conducted and Kumasi the Capital of the Ashanti Region where majority of the Data was obtained

The sample population for this study was Biomedical Laboratory Scientists, laboratory technicians and medical laboratory students on internship, who work in various health facilities in the Ashanti region both under the Ghana Health Service hospital laboratories and the Komfo Anokye Teaching hospital.

In Kumasi is situated the Kwame Nkrumah University of Science and Technology which started a bachelors degree training of biomedical scientist first in Ghana. A significant number of the laboratory science workers in Ghana are in the Ashanti region.

3.4 Sample size

Eighty percent out of the total of one hundred and forty-three known laboratory scientist in the Ashanti region, particularly in the Kumasi metropolis were included in this study. Out of

the total respondents, thirty-six (36) were in the teaching hospital, twenty-six (26) from the private hospital and laboratories, thirteen (13) from the district hospital, two (2) from the regional hospital and one (1) from the mission hospital The sample size is justifiable because it is a fair representation of one hundred and fifty medical laboratory workers in the Ashanti region.

The sample population and the sampling size is represented in the table below:

Table 1: Sampling Population of laboratory scientist in some selected health facilities in the Ashanti region

INSTITUTION	TOTAL NUMBER OF LAB SCIENTISTS	NUMBER SAMPLED
KOMFO ANOKYE TEACHING HOSPITAL	76	61
REGIONAL HOSP	4	3
DISTRICT HOSP	18	14
PRIVATE FACILITY	42	34
MISSION HOSP	3	2
TOTAL	142	114

3.5 Sampling technique

This sampling approach that was used in the study is convenience sampling technique. Greater majority of the questionnaires were administered in the laboratory scientist's quarterly general assembly. The remaining was sent to the other health facility that had less representation at the general assembly (GA) and which needed to meet the sampling population. This approach adopted in this study to avoid bias. This is because the groups of respondents identified for the study have an equal chance of being selected and as such the inferences drawn from the finding would be free from bias.

3.6 Data Collection tools

The data collection tool that was employed in the study is questionnaire. The study used structured close ended and a few open ended questionnaires. These questionnaires permitted specific responses that would help obtain the research objectives while a few of the open ended questions gave further information on some views. In this instance respondents gave responses in their own words but still in line with the research objectives. A hundred and fifty questionnaires were expected to be distributed to respondents.

3.7 Pre-testing of questionnaires

A critical part of the questionnaire development process was the pilot phase or the pretesting. The study used a pilot pre-questionnaire to sample the options of possible answers to the actual study. This involved testing the questionnaires in environments as similar as possible to the research, but not in order to report results. This was to remove ambiguity in questions and ultimately remove any impediments that would be detrimental to the research process. It was also to save cost.

3.8 Data Analysis

Continuous data were analyzed using the t-test, while Categorical data were analyzed using the Fisher's exact test or X^2 for trend. A p-value of < 0.05 was considered to be statistically significant. Graph Pad Prism version 5.00 for the Windows was used for the statistical analysis (Graph Pad software, San Diego California USA, www.graphpad.com). A 95 % confidence interval of the proportions of CPD activities stratified against various parameters was determined. The data would be analyzed manually and electronically to yield meaningful and interpretable results. An editing process was undertaken to remove inconsistencies and errors that may have been committed by the respondent. The responses were coded to provide a more convenient and simplified way of representing the information. The Statistical Package for Social Sciences (SPSS) software was also utilized for a few aspects of the data analysis. Statistical methods such as mean, frequencies, percentages, standard deviations, errors and variances were used to analyze the data. Cross tabulations to determining relationships was also be employed in some instances.

3.9 Eligibility Criteria

All Biomedical laboratory Scientists, lab technicians and students on internship in the lab working laboratory profession in the Ashanti Region, especially Komfo Anokye Teaching Hospital, Ghana health service facilities and Quasi hospitals, were eligible to be recruited into the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 INTRODUCTION

A total of one hundred and fourteen (114) questionnaires were sent out. Seventy-eight (78) responses were received from the respondents. This represents a response rate of over 52%.

4.1 TABLE OF RESULTS

Data from respondents are summarized into tables and other statistical representation for analysis and information representation. The sample size of the various laboratory facilities and their response rate and percentage is shown in the figure below.

Table 4.1 A table showing the distribution of respondents from the selected Health Facilities in the Ashanti region.

The table below shows the distribution of respondents from the various health institutions. The respondents were widely distributed in the selection process. The respondents from the mission hospital and the regional hospital were inadequately represented in relative numbers due to the reduced institutional representation in the region.

HEALTH FACILITY	Frequency	Percent
TEACHING HOSPITAL	36	46.2
REGIONAL HOSPITAL	2	2.6
DISTRICT HOSP/CLINIC	13	16.7
PRIVATE HOSP/ CLINIC	26	33.3
MISSION HOSP/CLINIC	1	1.3
Total	78	100.0

4.2 Response Rate of Questionnaires of the Health Institution

The distribution of the responses from the level of health facility is shown in table 4.1 below.

Table 4.2 A table showing the response ratio of questionnaires as against the institutions

INSTITUTION	TOTAL SCIENTIST	SAMPLED POPULATION	RETURNED REPONSE	RESPONSE RATIO
KATH	76	61	36	0.47
REGIONAL	4	3	2	0.5
DISTRICT	18	14	13	0.72
PRIVATE	42	34	26	0.62

4.1 The level of awareness of CPD at KATH, and selected health facilities.

The lab scientists of the selected health facilities showed varied view of their level of awareness for the various kinds of CPD that was available to them.

4.1.1 Percentage Participation of Laboratory Scientists In CPD Activities

This study showed that, 63 respondents (80.8%) had participated in continuous profession development activity in the last twelve months. While 15 respondents (19.2%), representing less than 20% had not taken part in CPD activities in the last twelve months.

Table 4.3: CPD Percentage Participation Of Respondents

RESPONSE	Frequency	Percent	Cumulative Percent
YES	63	80.8	80.8
NO	15	19.2	100.0
Total	78	100.0	

4.1.2 CPD activities as against respondents' sex, department, position or rank and facility of the laboratory professionals

Data presented in table 4.2 showed that 15 females out of 21 participated in CPD activities representing percentage incidence of 71% and a 95% confidence interval of 49.79% - 86.44%. 48 males out of 57 sampled in the study participated in CPD activities representing a percentage incidence of 84.21% and a 95% confidence interval of 72.41 – 91.69. The incidence ratio of males is 1.18 times CPD participation more over females ((Ref (1)). The p-value was not statistically significant showing that the gender of the laboratory professional in the study was not a prerequisite for CPD participation.

Participation of respondents from the various departments showed, 17/17(100% incidence), 7/8 (87.5% incidence), 11/14 (78.6% incidence), 17/23 (73.9% incidence), 4/14 (28.6%

incidence) and $\frac{3}{4}$ (75% incidence) for the Bacteriology, biochemistry, blood bank, hematology, parasitology and histopathology departments respectively. Comparing the incidence ratio using the parasitology respondents as reference shows that respondents of the other departments of bacteriology, biochemistry, blood bank, haematology, parasitology and histopathology attended CPD activities approximately three (3) times that of parasitology. The P-value of this hypothesis is 0.0795 and a chi square value of 3.076.

The position or rank of the laboratory professional in the Ashanti region is statistically significant to determine his/her participation in a CPD activity. Students on internship showed that, no member out of 4 respondents have taken part in a CPD activity in the last one year, representing no percentage incidence for CPD participation, but a 95% confidence interval of up to 55%. Laboratory technicians and principal biomedical scientists recorded 3 out of 3 and 6 out of 6 CPD participation respectively, representing 100% incidence participation. This presents a 95% confidence interval of 38.3 – 54.6 and 55.7-100 for the lab technicians and the principal biomedical scientist respectively. Chief technician had 2 out of 3 participate in CPD activity representing a percentage incidence of 66.7% with a confidence interval of 20.2-94.8. Biomedical scientists and senior biomedical scientists had 22 out of 27 and 30 out of 35 CPD activities attended respectively. This represents 81.5% incidence and 85.7% incidence for the biomedical scientist and senior biomedical scientist respectively. The 95% confidence interval ranges from 62.8 to 92.3 for the biomedical scientist and 70.2 to 94.2 for the senior biomedical scientist.

The incidence ratio showed that the laboratory technician and the principal biomedical scientist have 1.5 times chance, more than the chief technician (which our point of reference) in attending a CPD activity in the duration under study. The biomedical scientist and the senior biomedical scientist have 1.2 times and 1.3 times more chance respectively to

undertake a CPD activity than the chief technician. However the student intern has no chance to undertake a CPD activity relative to the chief technician. The chi square value was 7.501

The data showed no CPD participation out of the only respondent from the mission hospital for the study. The regional and private hospital laboratory professional respondents however showed full participation in CPD activities for the duration under study with all 26 respondents and all 2 respondents participating respectively representing 100% incidence. The 95% confidence interval reveals 84.8 – 100 for private hospital laboratory professionals and 29 – 100. The district hospital showed 9 out of 13 of respondents participating in CPD activities. This represents 69% incidence with a confidence interval of 42.0 – 87.7. The teaching hospital recorded the highest incidence percentage of 72.2% from 26 respondents participating out of 36. The confidence interval is 55.9 – 84.3.

The incidence ratio shows that, the chance of participation of laboratory professionals from the private and regional hospitals were 1.44 times more than the district hospital, while the teaching hospital laboratory professional has a 1.04 times chance of attending a CPD activity over that from the district hospital. The mission hospital's laboratory professional have not much chance against district hospital laboratory personnel in participating in a CPD activity. The P-value is 0.7032.

Table 4.4 CPD activities as against respondents' sex, department, position or rank and facility of the laboratory professionals

Parameters	n/N	Incidence(%)	95% CI	Inc. Ratio	χ^2 ,df	P-Value
Sex						
Female	15/21	71.43	49.79-86.44	Ref(1)		
Male	48/57	84.21	72.41-91.69	1.18	1.614, 1	0.2039
Department						
Bacteriology	17/17	100	78.37-100.00	3.5		
Biochemistry	7/8	87.50	50.78- 99.89	3.06		
Blood Bank	11/14	78.57	51.68 -93.16	2.75		
Haematology	17/23	73.91	53.24-87.74	2.59		
Parasitology	4/14	28.57	11.34 -55.03	Ref(1)		
Histopathology	3/4	75.00	28.91-96.59	2.625	3.076, 1	0.0795
Position						
Student(Intern)	0/4	0	00.00-54.59	0		
Lab Technician	3/3	100	38.25-100.00	1.5		
Chief Technician	2/3	66.67	20.24 - 94.37	Ref(1)		
BioM. Scientist	22/27	81.48	62.84 - 92.28	1.22		
Sn.BioM.Scientist	30/35	85.71	70.15 - 94.22	1.29		
P. BioM. Scientist	6/6	100	55.72- 100.00	1.5	7.501, 1	0.0062
Facility						
Mission	0/1	0	00.00 - 83.25	0		
Private	26/26	100	84.76 - 100.00	1.44		

District	9/13	69.23	42.04 - 87.65	Ref(1)		
Regional	2/2	100	29.02 - 100.00	1.44		
Teaching	26/36	72.22	55.86 – 84.30	1.04	0.1451, 1	0.7032

Data is presented as percentage and figures, CI is confidence interval, n represents the number of respondents who have attended a continuous professional education activity, N is the total respondents in the facility. BioM is biomedical, SnBioM is senior biomedical, P. BioM is principal biomedical. P is significant at $P < 0.05$, χ^2 is the chi square for trends, df is the degree of freedom.

4.1.3 Record of CPD activity attended as against gender of laboratory professionals

This study showed that, male laboratory professionals attend or have more chance to attend CPD activities (84%) against male lab professionals who have not attended any CPD activities. The female laboratory professionals however have attended or have the chance CPD activities a relatively lower percentage (71%) against their counterparts who have not attended any CPD activity.

Similarly, this study showed that, the male lab professionals kept log or all their CPD activities (68%) more than the female lab professionals did (57%). The male lab professionals were more willing to subscribe to journals (67%) and paying for the subscription where applicable (56%) more than their female counterparts who subscribed (31%) relatively lower for journals, with a few willing to pay for the journal subscription (48%) where applicable. The study also showed that, the male lab professional undertook more in-house CPD activity (35%) compared with other males who did not undertake in-house CPD activities. This percentage was however greater than female lab professionals who undertook in-house CPD

activities (7%) against their female colleagues who did not attend in-house CPD activities in the year under study.

The study significantly showed the male lab professional participated more (47%) in CPD activities not related to their career path or field of work than their male colleague. While the female laboratory professionals had a smaller percentage (12%) of respondents who took part in CPD activities not related to their career part or field.

On the contrary to norm or believe of males dominating the computer world, this study significantly showed that female lab workers participated in more online CPD activities (43%) than their respective male colleagues(24%). The female laboratory professional had more chance or had attended international CPD activities (52%), according to this study, than the male lab professional who participated in less times and percentage (47%) in CPD activities.



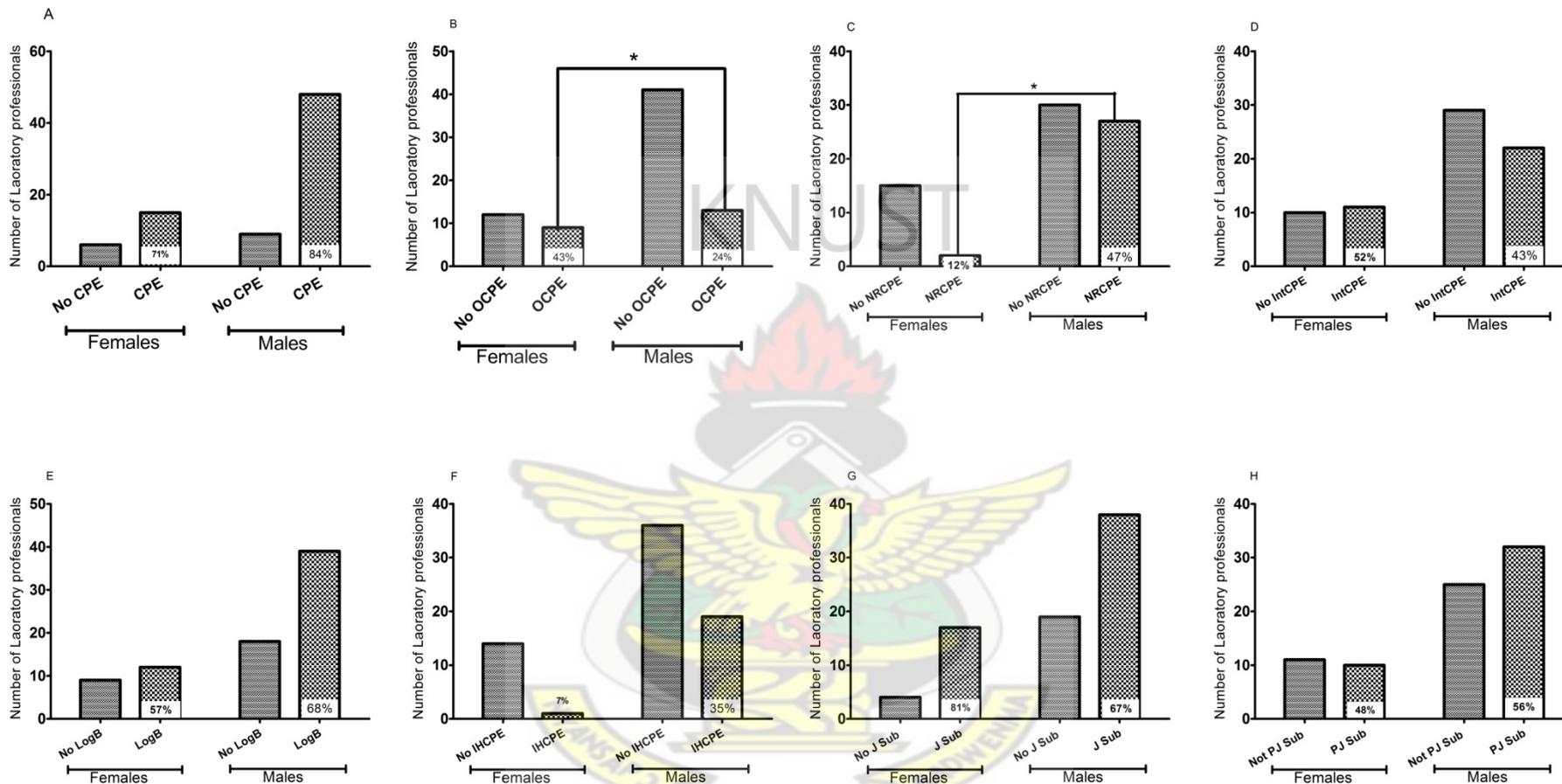


Figure 3 CPD activity as against gender of laboratory professionals

4.2 The availability and ease of access to CPD activities

The various CPD activities indentified in this study includes online training, international CPD, in-house training, non professionally related CPD activity and journal subscription of the various lab scientists.

The ease of access of the lab scientist for CPD is extracted as it is stratified against work experience and mean age of the lab professional in relation to their chances of accessing CPD activity in their various health facilities.

4.2.1 Work Experience of Lab Professionals compared with access to CPD Activities

As shown in table 2, work experience or inexperience stratified by various CPD practices presented some significant statistical facts using chi square test for trend in the criteria used.

The mean work experience (in years) of respondents who had in general not taken part in CPD activities was lower (4.73 ± 4.27) than the mean work experience of respondents (5.30 ± 6.34) who had taken CPD activities in the period of consideration for the study ($P=0.6357$). It is inferred from this study that, the more experienced may have taken more CPD activities than the less experienced workers. Similarly, the mean work experience of respondents in this study who had no online CPD activity and no international CPD activity in the last twelve months were lower (4.88 ± 3.65) and (4.82 ± 3.93) respectively) than those who had taken online CPD activity (5.24 ± 4.96) and those who have had international CPD participation (6.39 ± 4.89).

From this study, the mean work experience for respondents who had participated in an in-house CPD activity (5.70 ± 4.67) and those who had not had one (5.00 ± 2.90) was approximately the same working years ($p=0.5357$).

The study also showed that, workers with less work experience of mean 3.28 ± 3.42 significantly ($P=0.0013$) participated in CPD activities not related to their professional career or field, unlike those with more experience with a mean of 6.44 ± 4.30 , who did not take much interest in attending CPD activities unrelated to their professional carrier. It was significantly ($p < 0.0001$) also shown, that the lab professionals with less work experience (3.71 ± 2.91), keep log of their CPD activities, while the more experienced in the profession with mean work experience of 8.00 ± 4.68 did not keep record of their CPD activities in a log book. In the study, a significant proportion ($p = < 0.0001$) of less experienced lab professional (4.02 ± 3.11) had subscribed to a journal for continuous learning, but this was not the case for those with higher work experience (8.00 ± 4.95). Similarly, a significant number (0.017) of the less experienced workers (4.17 ± 3.36) were willing to pay for the journal subscription where required, when the more experienced workers (6.39 ± 4.66) were only prepared to take the journals only for free.

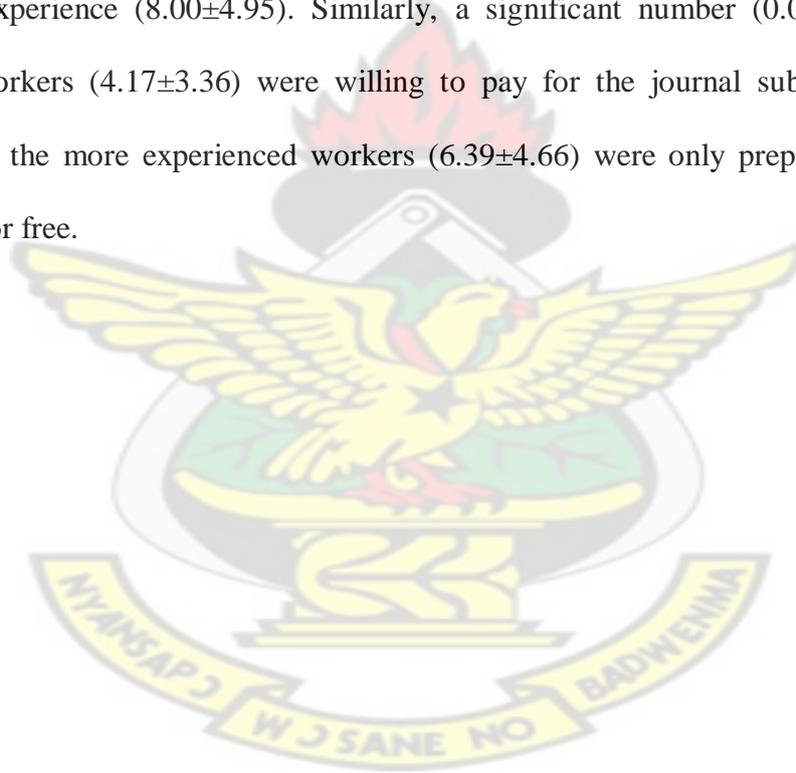


Table 4.5 Work Experience of Laboratory Professionals in Ashanti Region compared against access to CPD Activity

Parameters	No CPD	95% CI	CPD Activity	95% CI	P-Value
CPD	4.73 ± 4.27	(2.37 - 7.10)	5.30 ± 4.13	(4.26 - 6.34)	0.6357
OCPD	4.88 ± 3.65	(3.84 - 5.92)	5.24 ± 4.96	3.19 - 7.29	0.7228
NRCPD	6.44 ± 4.30	(5.15 - 7.74)	3.28 ± 3.42	(1.97 - 4.58)	0.0013
IntCPD	4.82 ± 3.93	(3.55 - 6.09)	6.39 ± 4.89	(4.89 - 7.90)	0.1067
Log Book	8.00 ± 4.68	(6.15 - 9.85)	3.71 ± 2.91	(2.89 - 4.52)	<0.0001
IHCPD	5.70 ± 4.67	(4.37 - 7.03)	5.00 ± 2.90	(3.64 - 6.36)	0.5357
J Sub	8.00 ± 4.95	(5.86-10.14)	4.02 ± 3.11	(3.18 - 4.86)	<0.0001
PJ Sub	6.39 ± 4.66	(4.81 - 7.97)	4.17 ± 3.36	(3.12 - 5.21)	0.017

Continuous data were presented as mean ± SD and figures of work experience; categorical data are presented as proportion with percentages. Continuous data were compared using unpaired t-test whilst categorical data were compared using fisher's exact test: p is significant at < 0.05*, < 0.01**, and < 0.001***.

4.2.2 Mean Age of laboratory professionals and its relationship to gender, as against access to CPD activities

From this study, (Graph A) shows the mean age and the standard error of the mean, SEM, of the respondents as 32.04 ± 4.38 years. The males are having a higher mean age and SEM of 32.18 ± 6.10 and the females with a lower mean and SEM age of 31.67 ± 6.11 .

The mean age of respondents considered for this category of CPD activity, according to this study is 32.04 ± 4.38 . The mean age of respondents who have participated in a CPD activity from this study was higher, (32.73 ± 4.16) than the mean age of respondents who have not participated in a CPD activity (31.87 ± 4.60). This suggests that increase in the age correlates with higher age of the laboratory professionals (Graph B).

The mean age of respondents who had not undertaken an online CPD activity was lower (31.50 ± 3.44) than those had taken an online CPD activity (32.16 ± 5.37). The overall mean age of the online CPD participants and non-participants is 31.72 ± 5.37 SEM (Graph C).

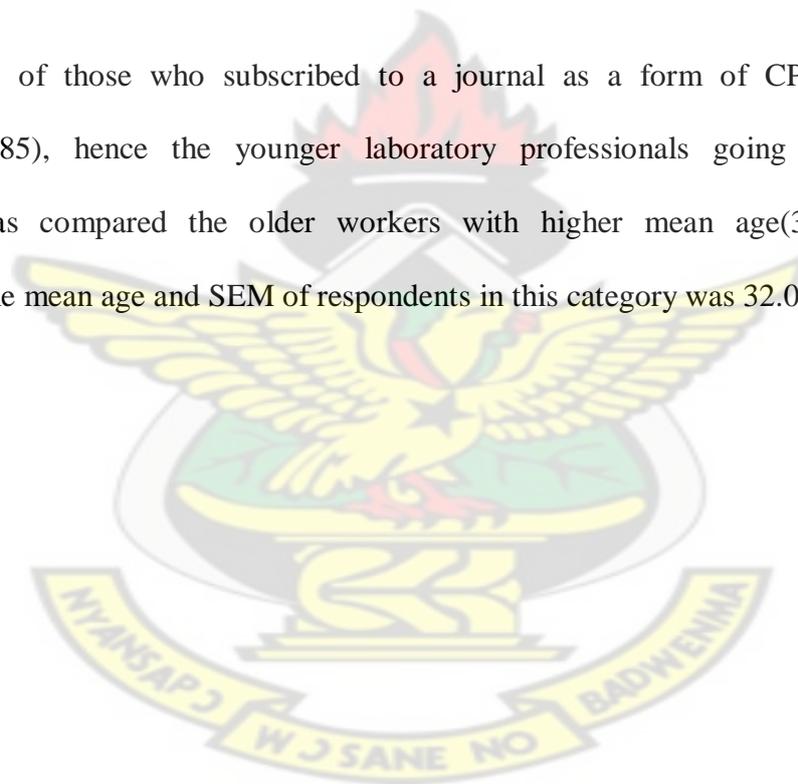
The study showed that the young laboratory professionals, who responded to this study, undertook CPD activities unrelated to their professional career or fields, the most. The mean age of the participants for non related CPD activity was 30.93 ± 3.31 while the mean age of respondents who did not partake in any career unrelated CPD activity was 30.93 ± 3.31 . The mean age of respondents for this category is 31.93 ± 4.47 years (Graph D).

The graph for International CPD participation (graph E) shows the mean age of participation of respondents who have participated in an international CPD as 33.06 ± 4.77 , and those who had not had an international CPD having the mean age and SEM of 31.26 ± 4.25 . The mean age of respondents in this category was 32.08 ± 4.56 .

Graph F is showing the mean age and SEM of respondents who kept log books for recording their CPD activity. Those who kept their log books had a lower mean age(31.49 ± 3.86) as compared to those who did not keep log books for their CPD activity(33.07 ± 5.14). The mean age and SEM for total respondents for this category was 32.58 ± 4.38 .

The mean age of respondents who participated in in-house CPD training was 32.35 ± 3.27 which was nearly the same mean age as those who did not participate in any in-house organized CPD activity (32.36 ± 4.81) but with a higher standard error of mean. The mean age and SEM of all respondents in this category was similar to the previous mentioned means, thus 32.58 ± 4.40 years.

The mean age of those who subscribed to a journal as a form of CPD activity was lower(31.58 ± 3.85), hence the younger laboratory professionals going in for journal subscriptions as compared the older workers with higher mean age(33.13 ± 5.38) not subscribing. The mean age and SEM of respondents in this category was 32.04 ± 4.38 .



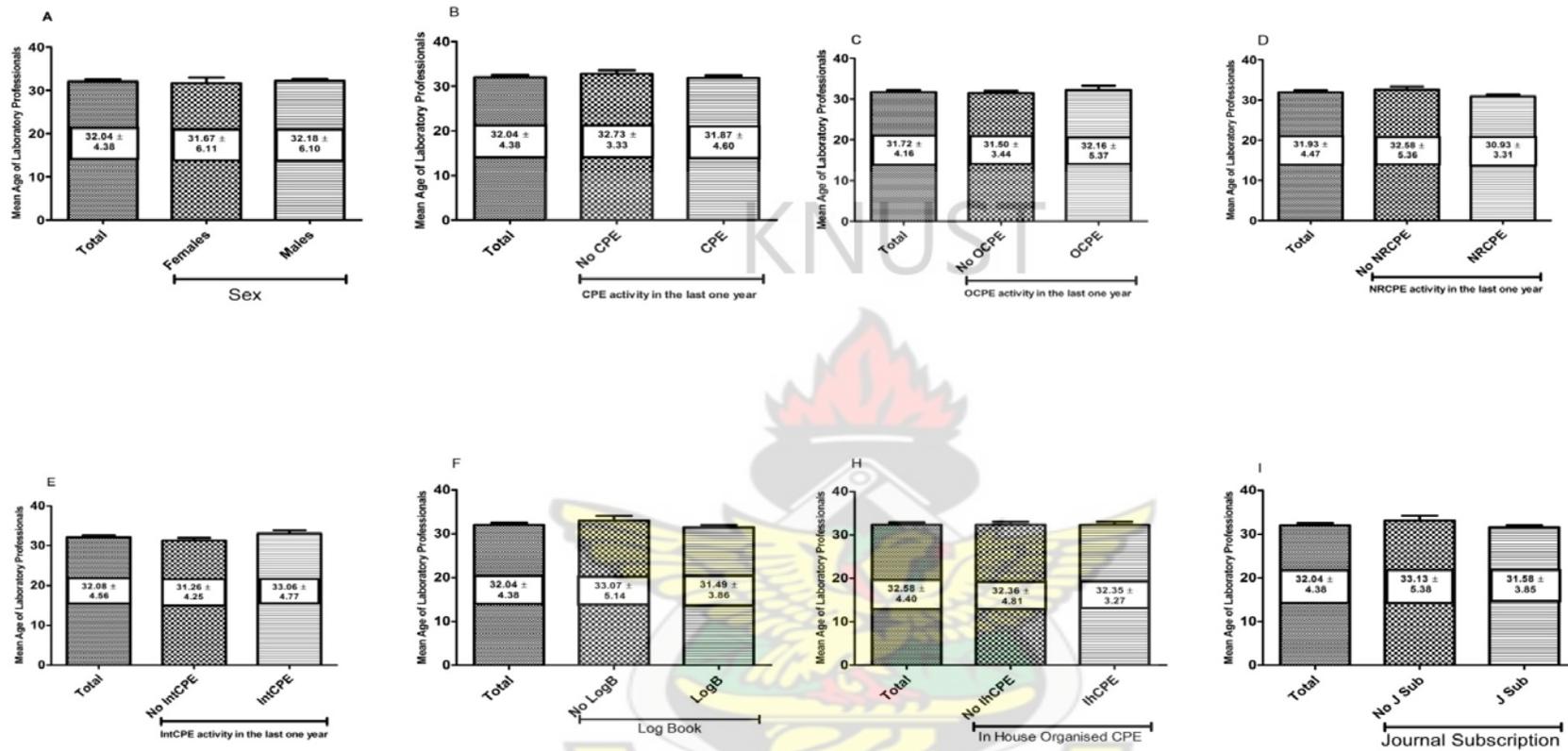


Figure 4: Mean Age of laboratory professionals compared to their Sex, and access to CPD activities as Log Book usage and Journal Subscription

4.2.3 Providers of CPD Activities for Laboratory Scientists

The study showed the institution that provided CPD to make them available for patronage. Other institutions, associations and organizations provided the highest number of CPD activities for the lab professional, followed by the employers and research institutions.

Table 4.6 Providers of CPD Activities

PROVIDERS OF CPD ACTIVITY	Frequency	Percent
EMPLOYERS	21	26.9
MOH-GHANA	4	5.1
RESEARCH INSTITUTION	18	23.1
PROJECT/STUDY RELATED INST	11	14.1
OTHER	24	30.7
Total	78	100

4.2.4 Availability Of CPD to lab scientists through Funders and Sponsors

The employers and others bodies provided the greater part of sponsorship for the CPD of the laboratory scientist representing 25.6% and 19.2% respectively. 10% of the laboratory professionals self funded themselves to undertake CPD activities while the Ghana Health Service and Non- Governmental Organizations gave 9% of funding each.

Table 4.7 Table showing the activity funders for CPD

FUNDING OPTIONS PROVIDED	Frequency	Percent
EMPLOYER	20	25.6
GHANA HEALTH SERVICE	7	9.0
NGO	7	9.0
SELF FUNDED	8	10.3
OTHER	15	19.2
N/A	21	26.9
Total	78	100.0

4.2.5 The Ease Provided For CPD participation through the Level of Sponsorship

The ease of participation for CPD is greatly enhanced by the level of funding for the activity for the lab scientist. The study showed that, over 55% of the CPD activity was fully funded, while 12.8% of the funding was partially provided. A half, greater than half or less than half, of the total amount of funding constituted the partial funding for the CPD activities. There was no funding for CPD activity undertaken by the lab professionals, and this represented 7.7% of the level of sponsorship.

Table 4.8 Level of Sponsorship

LEVEL OF SPONSORSHIP		Frequency	Percent
Valid	FULLY	43	55.1
	PARTIALLY	10	12.8
	NO SPONSORSHIP	6	7.7
	N/A	4	5.1
	Total	63	80.8
Missing	99	15	19.2
Total		78	100.0

4.3 The barriers and challenges to CPD participation

The study was able to identify the lack and inadequate distribution of funding as a major barrier in the various health facilities that presented as challenges to the participation of CPD of the lab professional.

Laboratory professionals and health institutions are compared against funding CPD activities and the barriers to CPD activity while the ranks of laboratory professionals are compared against their reasons for CPD participation.

4.3.1 Laboratory professionals compared with funding activities and barriers

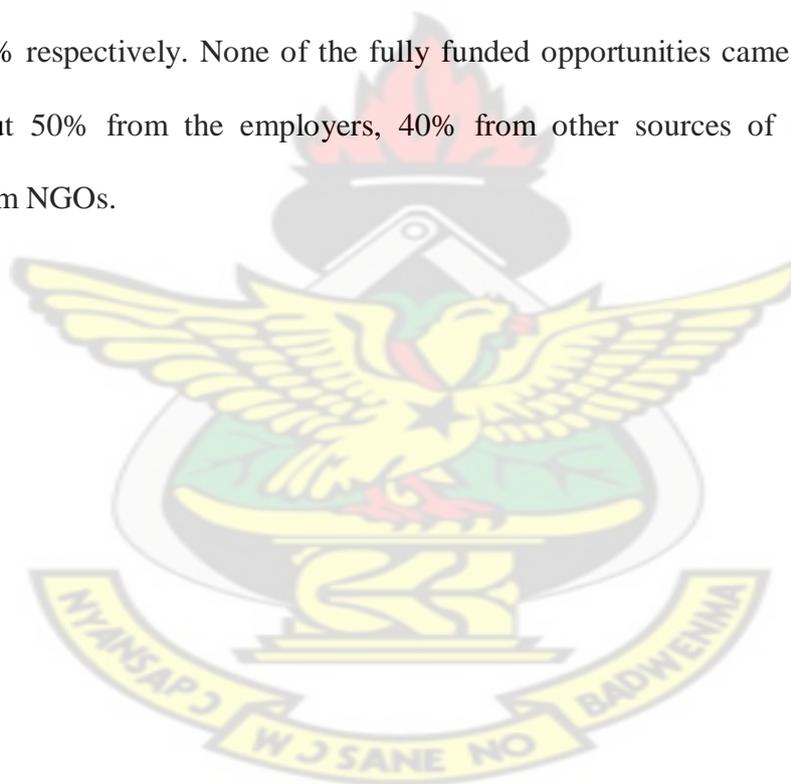
The outcome of this study showed that about 70% of the CPD activities undertaken by respondents were fully funded, about 20%, partially funded and 10% self funded. The study also shows that the majority of full funding came from the employers of the respondents (40%), followed by funding from other sources not stated in the study (35%), with the Ghana Health Service (GHS) and non-governmental organization (NGO) providing funds to about 17% and 8% respectively. The employers of the respondents contributed the most funding (40%) for partially funded CPD activities than other source of funders (30%) and NGOs (30%) which also partially supported CPD activities.

The pattern of funding from respondents from the teaching hospital showed that, about 70% received full funding for CPD activities, while partial and self funding was 15% each. Out of the full funding activities in the teaching hospital, the employer provided about 35%, the GHS provided about 30%, other sources of funding was 25% and funding from NGOs were 10%. Partial funding of respondents from the teaching hospital for CPD activities came from NGOs and other sources of funding, all contributing 50% each.

This study showed that 100% of respondents' CPD activities in the regional hospitals were fully funded. The funds were provided equally (50% each) by the Ghana Health Service and other source of funding but none from the employers and NGOs.

The respondents from the district hospital received about 60% full funding, with the rest being partial and self funding in decreasing order. Other sources of funding provided the greatest funds (45%), followed by the employers (35%) and the GHS and NGOs providing about 15% of the funds each.

Private respondents had full funding for their CPD activities, partial funding and self funding at 70%, 20% and 10% respectively. None of the fully funded opportunities came from the Ghana Health Service, but 50% from the employers, 40% from other sources of funding and the remaining 10% from NGOs.



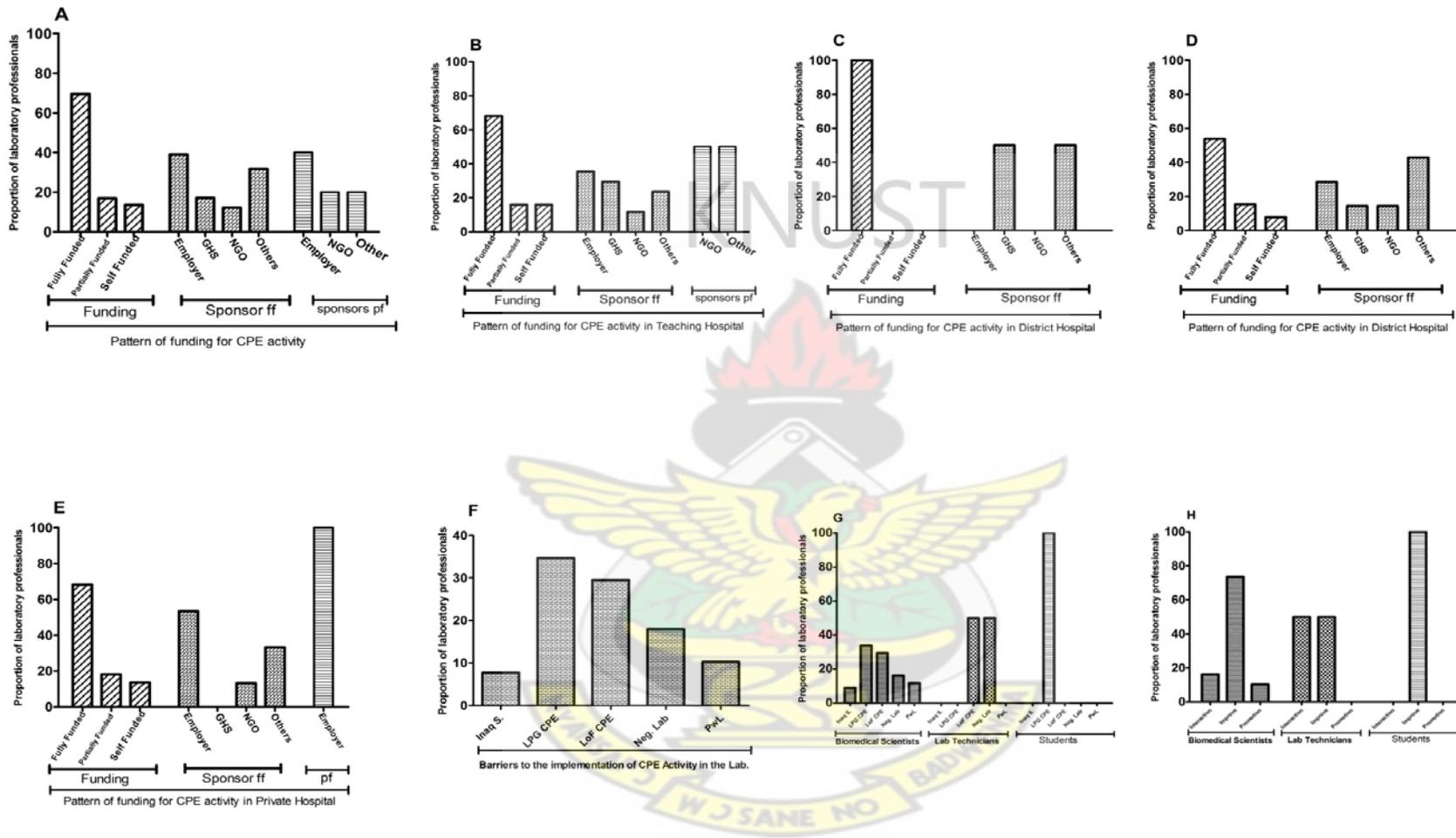


Figure 5: Proportion of Laboratory professionals and health institutions compared with funding CPD activities and barriers of the CPD activity

4.3.2 Laboratory professionals compared against reasons for CPD participation and major barriers of CPD participation

The study sought to find the reasons for participation of respondents in CPD activities in the region. The rank of the lab professionals as against the reasons for CPD participation showed that, over 75% of Biomedical Laboratory Scientists attended for the reason of improving skills, 17% for interaction with other colleagues in the profession and 8% attended CPD activities to enable them qualify to obtain promotion or higher job status.

On the contrary, technicians in the laboratory profession attended CPD activities for the want of higher job status but equally for interaction with other colleagues in the profession (50%) and to improve skills of one's professional career.

The students on internship were mostly concerned with attending CPD activities to improve their professional skills (100%). It is reasonable that they not concerned with higher job status because they have no job at this stage and no interaction really with colleagues they just parted with form school.

The lack of a policy guideline for regulation was the greatest barrier for implementation (35%) identified or perceived by the Biomedical scientist for CPD activities, while the lack of adequate funding (30%) followed, with others of the believe that the neglect of laboratory profession(17%) relative to the other health sectors was a barrier to bringing CPD activities to fruition. The Biomedical Scientist also was of the perception that lack of good leadership (10%) impeded the implementation of CPD activities, while the inadequacy of staff (8%) contributed less than 10% as barrier for implementation.

The technicians were of different view, according to the study, on what contributed to a barrier in implementation of CPD activities. The lack of funding (50%) and the perceived neglect of the lab

profession (50%) by the decision makers or authorities were the barriers, while the student interns cited the lack of policy (100%) guidelines as the barrier that prevents implementation of CPD activities among laboratory professionals in the health service.

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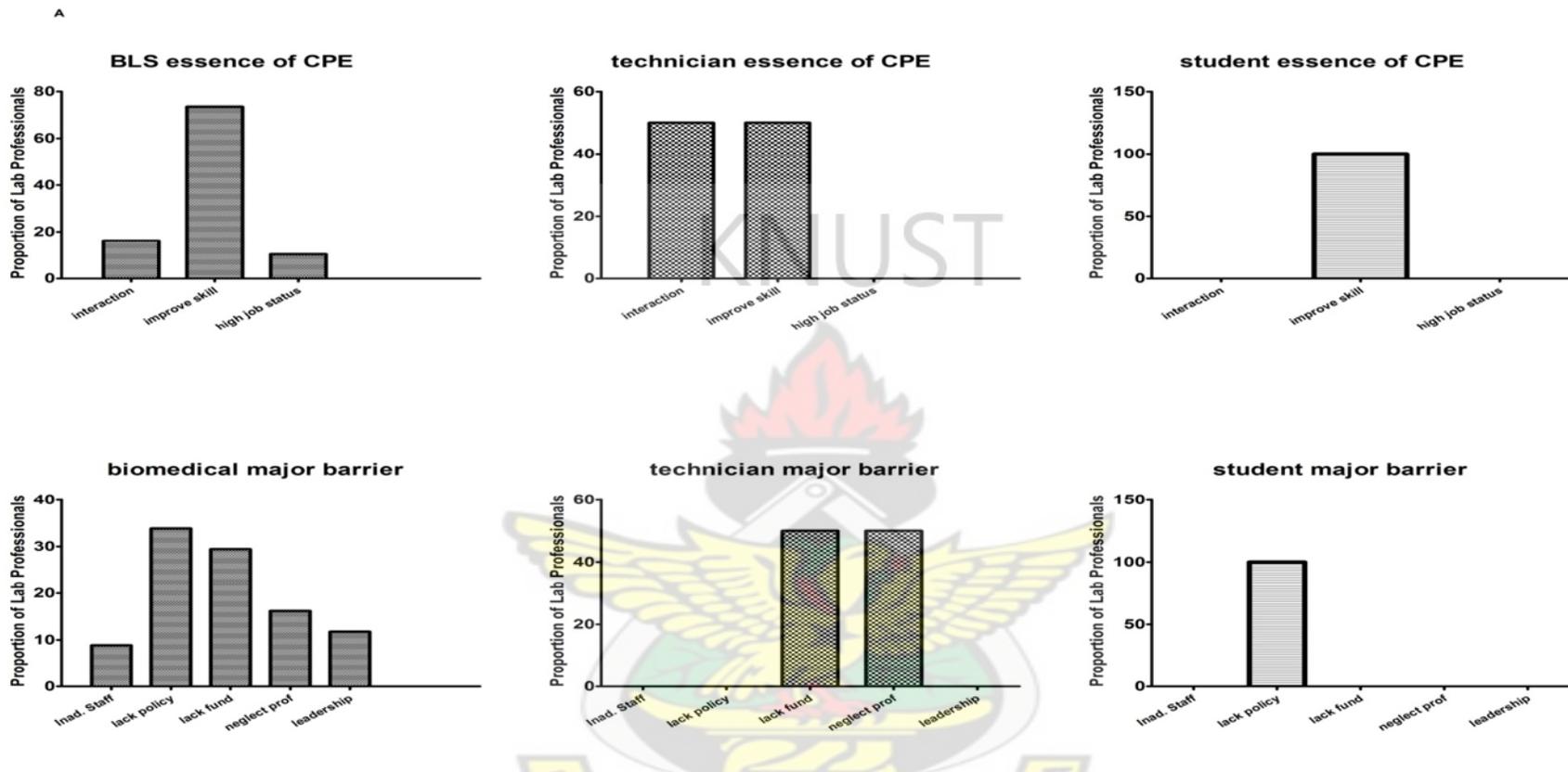


Figure 6: Proportion of lab professionals stratified against reasons for CPD participation and major barriers of CPD participation

4.4 Contribution of the Association on the availability and ease of access of CPD for its members

The Ghana Association of Biomedical Laboratory Scientists, (GABMLS) is the body that represents the medical laboratory scientists in Ghana. Different health professionals' associations are greatly involved with providing CPD for its members. For example, for the medical doctors, continuous medical education, CME, is a mandate to attend in order to renew a member's license annually. It is the same for pharmacists in ensuring that its members are up to date with the current trends of issues in the health world. The associations thus aid in making available the CPD programs and facilitate the ease of access for its members.

The GABMLS, till this time have not got any such provision that mandate their members for CPD activities, and hence do not facilitate the availability and the ease of access of CPD for their members. This study however showed that members were in support of the association, taking up the responsibility of ensuring the availability and the ease of access of CPD to its members.

A positive response percentage of close to 90% supports the view, with 7.7% saying no to the idea of the association's involvement and less than 3% not sure of the idea of the association's involvement.

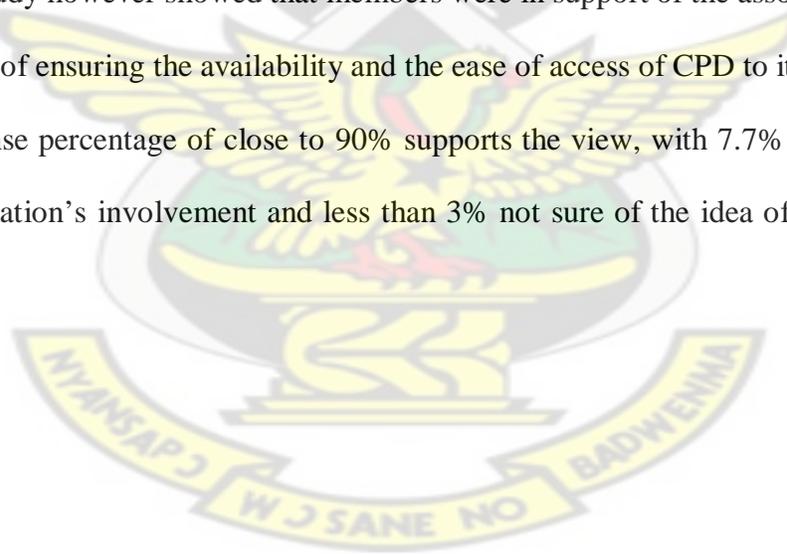


Table 4.9 Views of Respondents on association’s involvement with CPD of its members

REPOSE ON INVOLVEMENT	Frequency	Percent	Cumulative Percent
YES	70	89.7	89.7
NO	6	7.7	97.4
DONT KNOW / NOT SURE	2	2.6	100.0
Total	78	100.0	

4.5 DISCUSSION OF RESULTS

The results of the data presented and analyzed is discussed in the sections below

4.5.1 Level of awareness to CPD activities

Human resource management’s role is to manage staff of the company from, recruitment, selection, orientation, training, appraisal, continuous education and development, among other responsibilities to improve the skills of its staff. This is to raise the standard of production for the institution/company. Continuous development and/or education improve the skills and the career of its members, helping them to be up to date with current trends of technology, skill, and productivity in every aspect of the company. This is a reason enough making it a vital role in the human source management’s activity. Although this role is important, it has been sidelined in many times due to several reasons, thus rendering the future competitive ability of many companies nonexistent.

This study showed that, about 80% of laboratory scientists had taken part in at least one activity linked to continuous education. This could be attributed to the shift in responsibility of providing continuous education from the institution to individuals. This assertion is in agreement with McCauley and Hezlett, (2001) and Arnold, (2001) which also views the organizations, shifting their responsibilities of providing CPD, to the workers who would want to help themselves. This, they also refer to as self learning. They are of the view that the employees should take responsibility of their continuous education.

The study showed 84% and 71% incidence participation in CPD activities of respondents in males and females respectively, and nearly 2 times incidence ratio of male participation more than females. No attributable reason was found in explain this but the fact that there are more male laboratory scientists in the health sector than females hence the participation in CPD activities could take same trend.

There was no statistical difference in relation to the difference in the ranks of laboratory scientists. However laboratory scientist from bacteriology and biochemistry departments had three times chance of CPD participation than parasitology respondents as hematology, blood bankers and histopathology department workers had a little over two times chance of CPD participation over the parasitology department (reference department).

This study went on to show that the level of health facility in which one works had a little influence on the CPD participation rate of laboratory workers. The private and regional hospitals have about one and half times chance, the teaching hospital, about one time chance, and the mission hospital, not much of a time chance all in comparison to the district hospital laboratory worker to participate in a CPD activity.

A report from Free Online Library,"2011 on the factors affecting the continuing education of CEO and senior managers in a hospital, showed that time constraints, accessibility, relevance, quality and method of CE delivery were the major barriers observed in their CPD participation. This however contravenes with the findings (Table 2) of this study which show that the more experienced workers became, the more they partook in CPD activities. Therefore issues considered as barriers of the report from the hospital CEOs and senior managers, did not apply among the laboratory professionals of various ranks even to the management role.

General CPD activity, online CPD and international CPD activities had participation from the more experienced workers than the less experienced, while the less experienced workers participated in non career related CPD activities, in-house CPD activities, subscribed to journals, and were willing to pay for the subscription where necessary and also kept log book of the CPD activities. Not much literature has been on this topic.

The study showed that the respondents engaged in CPD activities which can be categorized into three kinds of continuous training namely formal job training, informal job training, and other-job related learning. For example respondents who took part in journal subscription can be classified as informal training, while others took part in online, international and in-house CPD activities, most of which were formal on the job trainings and lastly some others undertook CPD activities which had no direct relation to their career or field of professional practice, (47% for males and 12% for females). This can be classified as other-job related training but not direct – job related. This categorization is in agreement with the segregation of training discovered by Lans et al.,(2004) and Noe et al.,(1997).

4.5.2 Accessing the availability and ease of access to CPD

Noe and Wilk (1993), theory stated that favorable outcomes of continuous development or education activity were a source of motivation for employees CPD participation. In alignment to the report, this study also showed that more than 70% of biomedical scientist, 50% of laboratory technicians and 100% of students on internship were ready to participate in a CPD activity that would improve their skills in their professional career.

However, due to non availability of CPD activities required for the professional progress of laboratory workers of the health service, many have rather sought to attend some CPD activities not related to their professional jobs. About 12% of female respondents took part in a professionally unrelated CPD activity, while nearly four (4) times (47%) the number of the females, who are males, undertook a CPD activity not related to their professional career.

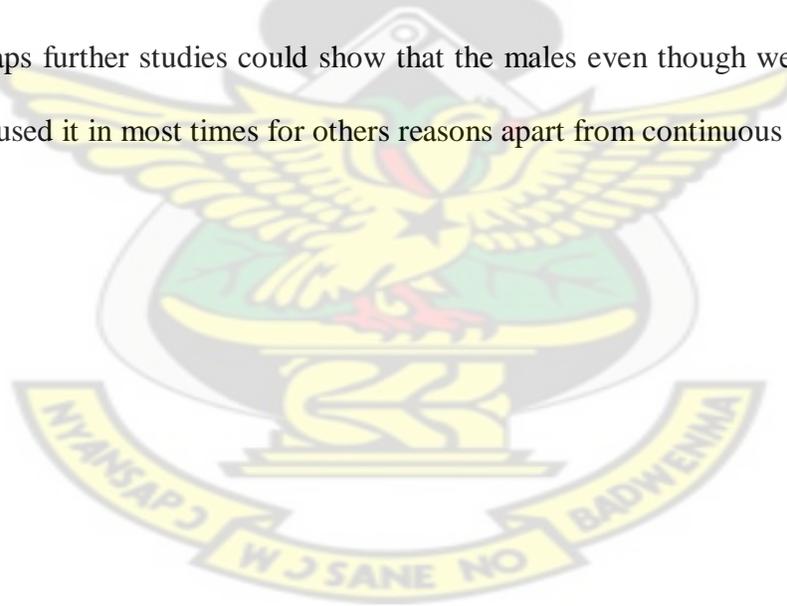
In the same relation, more female laboratory workers underwent internationally related CPD activity than the male counterparts. The female respondents represented 52% and males represented 43%;

4.5.3 Challenges and Barriers to CPD participation

Contrary to the report by Curan et al., (2006) that the key barriers to the access to CPD activities were geographic isolation, poor technological and telecommunications infrastructure, this study found the lack of a policy guideline for regulating CPD activity and as major barrier among biomedical scientists and student interns, inadequate or nonexistent financial factors for CPD activities as a major barrier for biomedical scientists and laboratory technicians and the neglect of the laboratory profession by health authorities also a major barrier for CPD activities identified by the laboratory technicians. Financial factors, such as funding to support travel or

cost of attendance, which were also identified as major challenges by Curan et al., (2006) agreed with the biomedical scientists and laboratory technicians in this study.

Cobb, (2005) reported that access to the internet possess a major barrier to online continuous, although the Internet is an effective and satisfactory educational format. This finding was also identified in this study, which showed low participation of 12% and mean age of 32.04 ± 4.38 for respondents on online CPD activity. This certainly meant that a little above 10% of respondents in the study had had online CPD activity participation. It further showed that the males of mean age, 32.18 years representing 24% actively participated in online CPD activities. This is less than the females of mean age, 31.67 years, representing 43% online CPD activities participation. It could not be explain further why females undertook more internet oriented CPD activities more the females against the norm or assertion that males surf the internet more frequently than females do. Perhaps further studies could show that the males even though were more times on the internet, they used it in most times for others reasons apart from continuous learning.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The findings of this study have provided fresh and additional knowledge on the existing practices of human resource development of the ministry of health-Ghana, particularly the continuous professional development practices among medical laboratory science professionals in the Ashanti region. From the analysis of the data presented, the findings were as follows:

Awareness of CPD activity

The study found out that, 80% of laboratory professionals (participants) had undertaken one or more forms of CPD activity in the past 12 months of work. The study identified, contrary to the previous perception, that most of the medical lab scientists were not involved in CPD activities and/or not aware of CPD opportunities available to them, that a statistically significant number were involved in CPD.

It also showed more males partaking in CPD than females in the profession. 15 females out of 21 participated in CPD activities representing percentage incidence of 71% and 48 males out of 57 sampled in the study participated in CPD activities representing a percentage incidence of 84.21%.

Availability of CPD and ease of access

A greater majority of participants were aware of varied forms of CPD activities available to them; formal, informal and other job related or unrelated CPD options. It also showed which types that lab workers patronized and the reason associated with which a type was chosen.

The position or rank of the laboratory professional was statistically significant to determine his/her chance to participate in a CPD activity. Student interns had little or no chance to undertake CPD activity in the duration of their internship.

Challenges and Barriers to CPD

The reasons for CPD participation, which the study identified showed that 75% of Biomedical Scientists attended CPD for the improving of skills, 17% for interaction with other colleagues in the profession and 8% attended CPD activities to enable them qualify to obtain promotion or higher job status.

5.2 CONCLUSION

The lack of computers may have contributed to lower patronage of online CPD activities. The female Lab scientist has however shown from the study their greater interest in using this form for CPD than males.

The contribution of journals in providing CPD for the lab scientist cannot be overlooked as the study showed close to 70% patronage for males and about 30% for female with the young workers using this form most.

It is also interesting to note from the study, the call for the professional association of Biomedical Laboratory Scientists, GABMLS to be involved with ensuring CPD is organized for its members. Respondents overwhelmingly pushed for this idea.

This has also exposed the practices of the various health institutions on CPD for their members under the MOH-Ghana, particularly the teaching hospital and the GHS.

Among the challenges and barriers indentified for CPD participation is the lack of funding, lack of a policy guideline regulating CPD activities in the laboratory profession which was not being followed and the perception of the neglect of laboratory profession compared with the commitment of authorities to other health professions. This goes to add to the fact that there is no regulatory authority or body overseeing the practice of laboratory practice in Ghana.

5.2 RECOMMENDATION

The findings of this study have shown the human resource development practices of the MOH-Ghana, which has contributed positively to the continuous professional development of the laboratory scientists in the country. However it has also shown the need for improvement of HRM in the area of CPD. The following recommendations are made in regard to the outcome of the study:

5.2.1 Awareness of CPD activities

15% of the laboratory scientists are not aware available CPD activities in their facility. To reduce and ultimately eliminate this, it is recommended that employers of the lab scientists should provide a clear policy guideline on CPD for its workers to continually update their knowledge, skills and ability. This should be implemented through clear program of activities providing education on the need for career development since the organization stands to benefit from this learning.

5.2.2 Availability and Ease of Access to CPD

The following recommendations are made based on the findings regarding availability and ease of access to CPD.

5.2.2.1 Funding for CPD activities

The study showed less expensive routes to CPD participation other than the traditional CPD activities that needed more funding. In respect to this, it is recommended that the Human Resource Managers adopt the alternatively less expensive route to providing CPD activities, like journal subscriptions in bulk, in-house (in-service training) workshops and seminars.

The non-governmental organizations and sponsors of various projects are encouraged to provide more funds to the laboratory sector since it the engine room of the health service in this era of evidence-based medicine but not leave the responsibility on the government.

5.2.2.2 Provision of logistics

Only 43% males and 24% females had undertaken online CPD activity. This could be attributed to the unavailability of adequate computers. The Human Resource Management of the institution could ensure the provision computers and internet connectivity to facilitate online CPD among its members, which has lately become less expensive to subscribe but has a wider leverage for its workers to use for CPD activity.

5.2.3 Challenges and Barriers to CPD

The study revealed the positive impact made by some health professional associations in ensuring CPD activities among their members. The following recommendations are made below:

5.2.3.1 Professional Association, Regulatory Bodies and Legislative Instrument

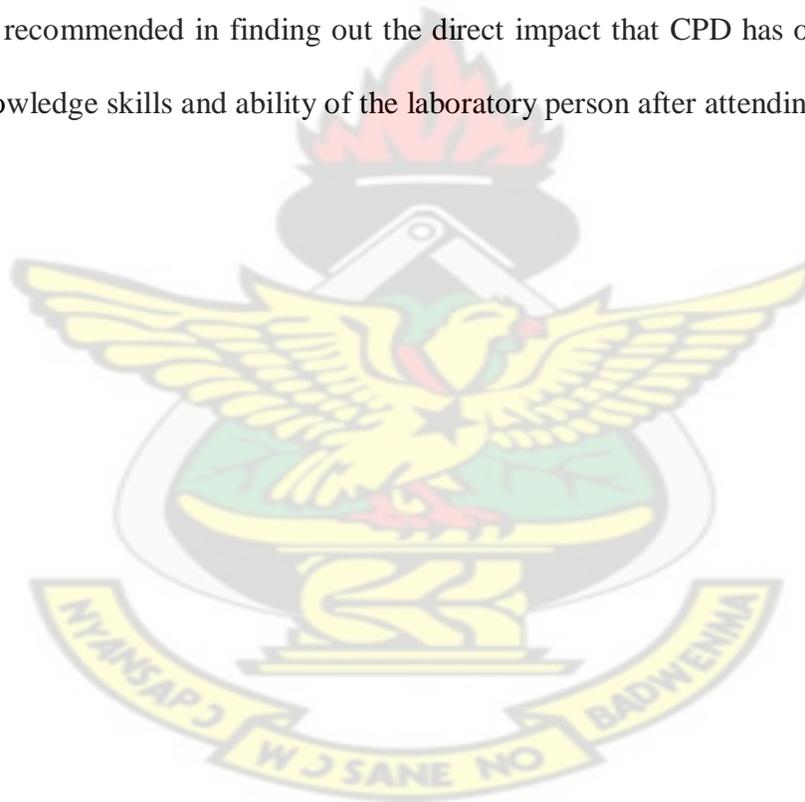
The Ghana Association of Biomedical Laboratory Scientist, (GABMLS) is encouraged to take up the responsibility of regulating, looking for sources of funding and also providing CPD for its members, since its represents the profession in the health sector.

The study revealed that most of the barriers to CPD can be attributed to the unavailability of a regulatory law or body over the laboratory practice in Ghana.

It is therefore recommended that the Government of Ghana and all stakeholders expedite work on passing the law regulating the allied health workers particularly the Biomedical Science profession in Ghana.

5.3 SUGGESTIONS FOR FURTHER RESEARCH

Further study is recommended in finding out the direct impact that CPD has on the outcome of output in the knowledge skills and ability of the laboratory person after attending CPD activity.



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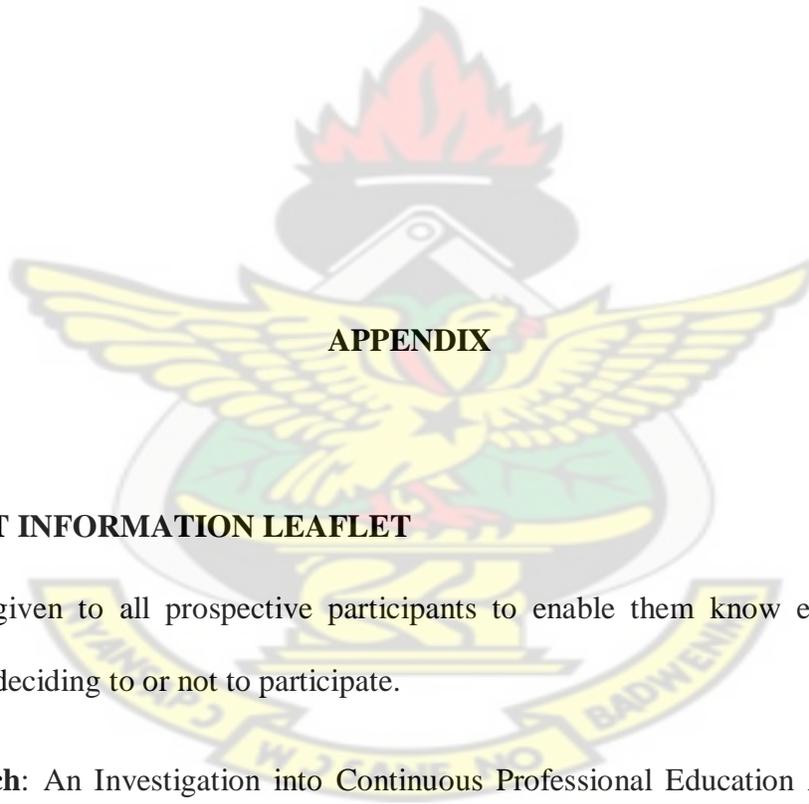
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APPENDIX

PARTICIPANT INFORMATION LEAFLET

This leaflet is given to all prospective participants to enable them know enough about the research before deciding to or not to participate.

Title of research: An Investigation into Continuous Professional Education Activities among Biomedical Laboratory Scientists in the Ashanti Region, Ghana

Name(s) and Affiliation(s) of researcher(s): Mr. David Ntiamoah Oforu, a student of Kwame Nkrumah university Of Science And Technology; and a worker of Komfo Anokye Teaching Hospital, Kumasi.

Purpose of research: Continuing Professional Development (CPD) or Continuing Professional Development (CPD) is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives. In this study a laboratory scientist or , a biomedical scientist is under consideration. This is a scientist who carries out scientific investigation on human specimen including body fluids, blood, body parts, fluid aspirates and any other parts of the body that could be pathologic. The study is to assess the level of availability, awareness, and ease of access to continuous professional education activities available to Biomedical Laboratory Science health professionals in the Ghana Health Sector which could continually match up the ever changing disease conditions.

Eligibility Criteria: All biomedical laboratory staffs of various levels or grade working currently in a health or laboratory facility is eligible to be enrolled into this study.

Procedure Of research: If you agree to be enrolled into this study, you will be administered the self explanatory questionnaire with or without assistance. There will be a total of 100 participants from the various labs from all levels of facility in the Ashanti Region. Once this study is completed, all the data will be kept till the end of 2011 and then discarded.

Risk(s): there is possibility of asking some questions that must evade your privacy.

Benefit(s): The findings of this study may go on to affect the policy decisions on the continuous professional development practices of all stakeholders of the medical laboratory profession, (the ministry of health, the Health institutions, the Human resource departments and the mother association, Ghana Association Of Biomedical Laboratory Scientists).

Confidentiality: All the information collected from you into this study will be well kept by us and not given to anybody. However the people who approved this study may sometimes carry out inspection, so if that happens in this study, we will show them the information collected but without your personal details.

Voluntariness: Your participation is entirely voluntary and you can decide to participate in this study or not.

Alternatives To participation: if you choose not to participate in this study, it will have no effect on your relationship with the investigator. You may choose to withdraw from this study anytime during the process.

Cost/compensation: There will be no cost or compensation to you for participating in this study.

Results Dissemination: Results of this study will be shared with the human resource department of the ministry of health, the human resource department of Komfo Anokye and other health facilities from which participants took part in the study. It will also be published in a peer-to-peer review journal.

Contact(s): In case you have any questions or reservations about this study please do not hesitate to contact

CONSENT FORM

Statement of person obtaining informed consent: _____

I have fully explained this research to and have given sufficient information, including that about risk(s) and benefits, to enable the prospective participant make an informed decision to or not to participate.

DATE: _____ NAME: _____

Statement of Person giving consent:

I have read the information on this study/research or have had it translated into a language I understand. I have also talked it over with the interviewer to my satisfaction.

I understand that my participation is voluntary (not compulsory).

I know about the purpose, methods, risks and benefits of the research study to decide that I want to take part in it.

I understand that I may freely stop being part of this study at any time without having to explain myself.

I have received a copy of this information leaflet and consent form to keep for myself.

NAME: _____

DATE: _____ SIGNATURE/THUMBPRINT: _____

CASE REPORT FORM (QUESTIONNAIRE)

Demographic Data

Sex of respondent Male..... Female.....

Age of respondent...

1. **What is the level of health facility in which you work?** (tick one applicable)

- Teaching Hospital1
- Regional Hospital.....2
- District Hospital3
- Private Hospital/Clinic.....4
- Mission/Quasi Hospital.....5

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2. **What is your grade in the laboratory** (tick one applicable)

- Biomedical scientist.....1
- Laboratory Technician.....2
- Laboratory assistant.....3
- Student on internship.....4

3. **What is your present rank/grade?**(tick one applicable)

- Technician/Biomedical scientist.....1
- Senior.....2
- Principal.....3
- Deputy Chief.....4
- Chief.....5

4. **In which department(s) do you work?** (tick all that apply)

Hematology.....

Blood Bank.....

Histopathology.....

Clinical Biochemistry.....

Microbiology.....

Parasitological.....

5. How many years and/or months (state if less than a year) you have been working in the laboratory?

Years-----

Months-----

Level Of Awareness Of Lab Scientists To CPD Activities

6. Have you ever participated in any continuous professional education in the last one year? Circle one applicable

Yes.....1

No.....2

7. Have you ever attended a training/workshop/seminar that did not relate/improve your professional career/skill as a laboratory scientist before?(Circle one that applies)

Yes.....1

No.....2

Not Applicable.....3

8. Have you taken CPD on the internet/online before? (Circle that appropriate)

Yes.....1

No.....2

9. Have you taken part in any international (outside the country) CPD program/activity before?(Circle one that applies)

Yes.....1

No.....2

10. Do you keep record /log book on CPD programs or activities you have taken part in?

Yes.....1

No.....2

11. Are you/have you applied the benefit(s) you derived from CPD activity you have attended (Circle that which applies)

Yes.....1

No.....2

Not applicable.....3

12. Which of these reasons BEST accounts for your reason for participation in CPD

To maintain and improve professional knowledge and skills.....

To interact and exchange news with colleagues.....

To obtain a higher job status.....

To avoid routine from workplace.....

To gain extra income from per diem.....

Other reasons.....

The Availability and Ease of Access to CPD Activities

13. Which institution provided the training? (tick that appropriate)

- Employer institution.....1
- Ministry of health.....2
- A Research institution.....3
- Project/study related institution.....4
- Other.....5

14. Were you sponsored for the training (either fully or partially)? (Choose where appropriate)

- Fully1
- Partially.....2
- No sponsorship.....3

15. If you were sponsored; who funded your CPD activity

- Teaching Hospital/Department/Institution.....1
- Ghana Health Service.....2
- Non Governmental Organization.....3
- Laboratory reagent/equipment supply companies.....4
- Self funded and/(NOT) reimbursed.....5
- Other, please specify.....6
- Not applicable.....7

16. Did the training/CPD provided directly relate to your profession? (Choose one)

- Yes1

No.....2

Not applicable.....3

17. Does your health facility organize/have a structured CPD program outline for activities on your laboratory profession? Circle the most applicable

Yes.....1

No.....2

Don't Know.....3

18. Does upgrading of position or promotion in your profession require you to have participated in one or a number of CPD activities? Tick One applicable

Yes.....1

No.....2

Don't Know.....3

19. In your opinion, is CPD an essential element in one's professional career development? Circle one

Yes.....1

No.....2

Don't Know/Not Sure.....3

20. Do you subscribe or are you willing to receive a professionally related journal

Yes, I do.....

No, I don't

The Barriers and Challenges To CPD Activities

21. Which of these options in your opinion is a MAJOR barrier to CPD among Biomedical laboratory scientists in your facility you can indentify?

(Tick the most applicable)

- Lack of funding.....1
- Lack of a policy guideline for implementation on CPD.....2
- Neglect of the lab profession relative to the other services in the hospital.....3
- Inadequate staffing.....4
- Others, please specify.....5

22. Must the professional body, Ghana Association of Biomedical Scientist be involved in Continuous professional Education activities among members in Ghana?

Tick one that applies

- Yes.....1
- No.....2
- Don't know/Not sure.....3
- Why.....
-

23. Are you willing to pay for subscription to a journal for your personal continuing education

- Yes, I do.....
- No, only for free.....

THANK YOU FOR PARTICIPATION

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