

**EXAMINING THE CURRENT LEVEL OF ADAPTION AND APPLICATION OF
EVIDENCE BASED PRACTICE (MEDICINE) AMONG MEDICAL PRACTITIONERS
IN THE PUBLIC SECTOR IN DIAGNOSIS AND TREATMENT**

(A STUDY OF KORLE-BU AND KOMFO ANOKYE TEACHING HOSPITALS)



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Declaration

I hereby declare that this submission is my own work towards the MPhil and that to the best of my knowledge, it contains no material previously published by another person or 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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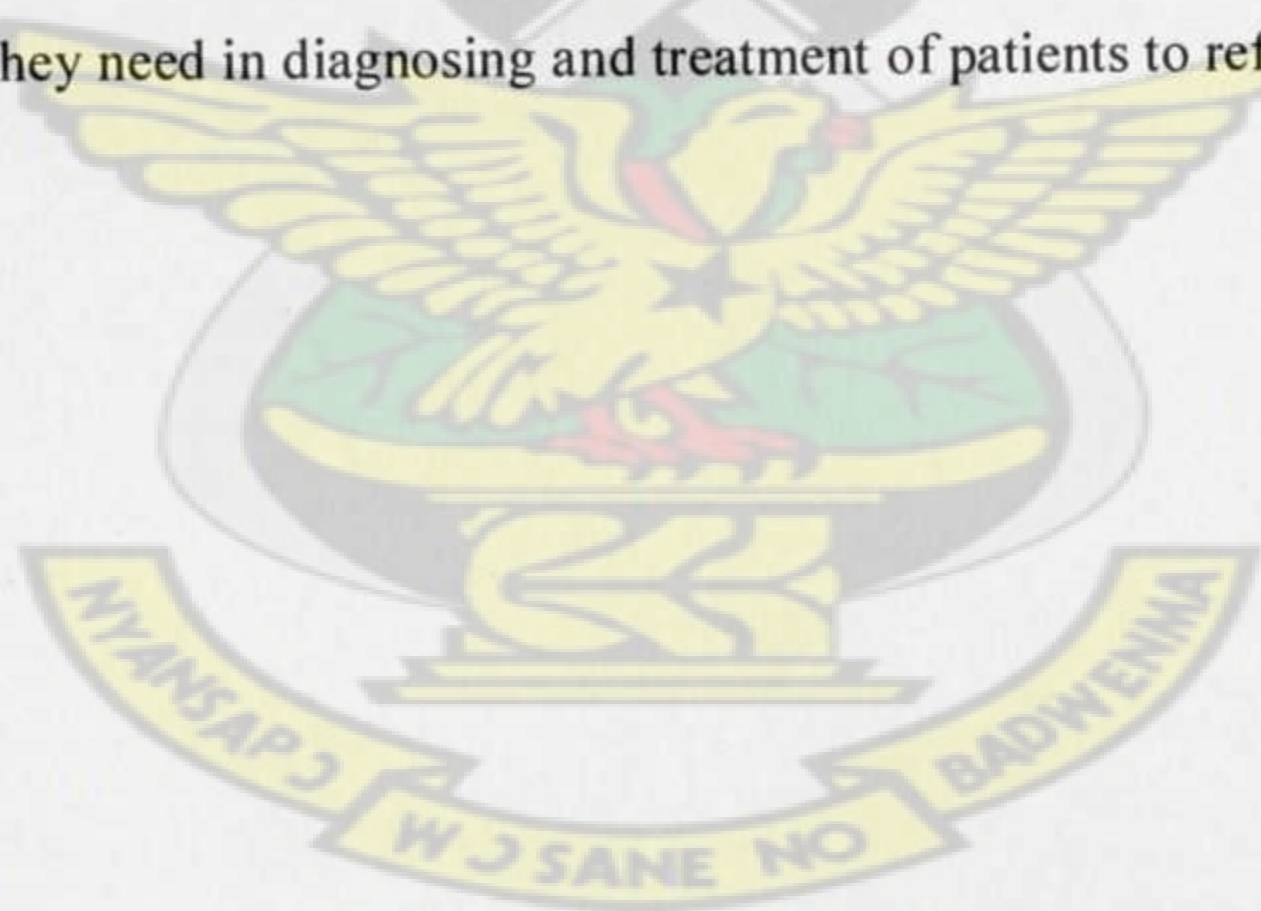
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practices. The correlation analysis of the knowledge attitudes and abilities of the practitioners indicated a positive relationship among the factors. The study also revealed inadequacy of Internet facilities and lack of local literature on EBP locally. Lack of funds to expand these facilities to the hospitals perceived to be hindering the adaptation and use of EBP in diagnosis and treatment of patients. Again, the study revealed ill-commitment of Management (Ministry of Health) in putting in place the necessary ICT tools and lack of local EBP were perceived as major constraints to adaptation and application of EBP into diagnosis and treatment of patients.

In conclusion, the results of the study indicate that the Ministry of Health needs to put in place the needed facilities to encourage medical practitioners to adopt the current level of practicing. Among others, the study recommends that the Ministry of Health establish ICT centres in the hospitals in Ghana with broadband, so that medical practitioners can have access to the needed information they need in diagnosing and treatment of patients to reflect on the current level of practices.



Dedication

I dedicate this work to my beloved husband for his support financially, emotionally and physically during this period.

KNUST



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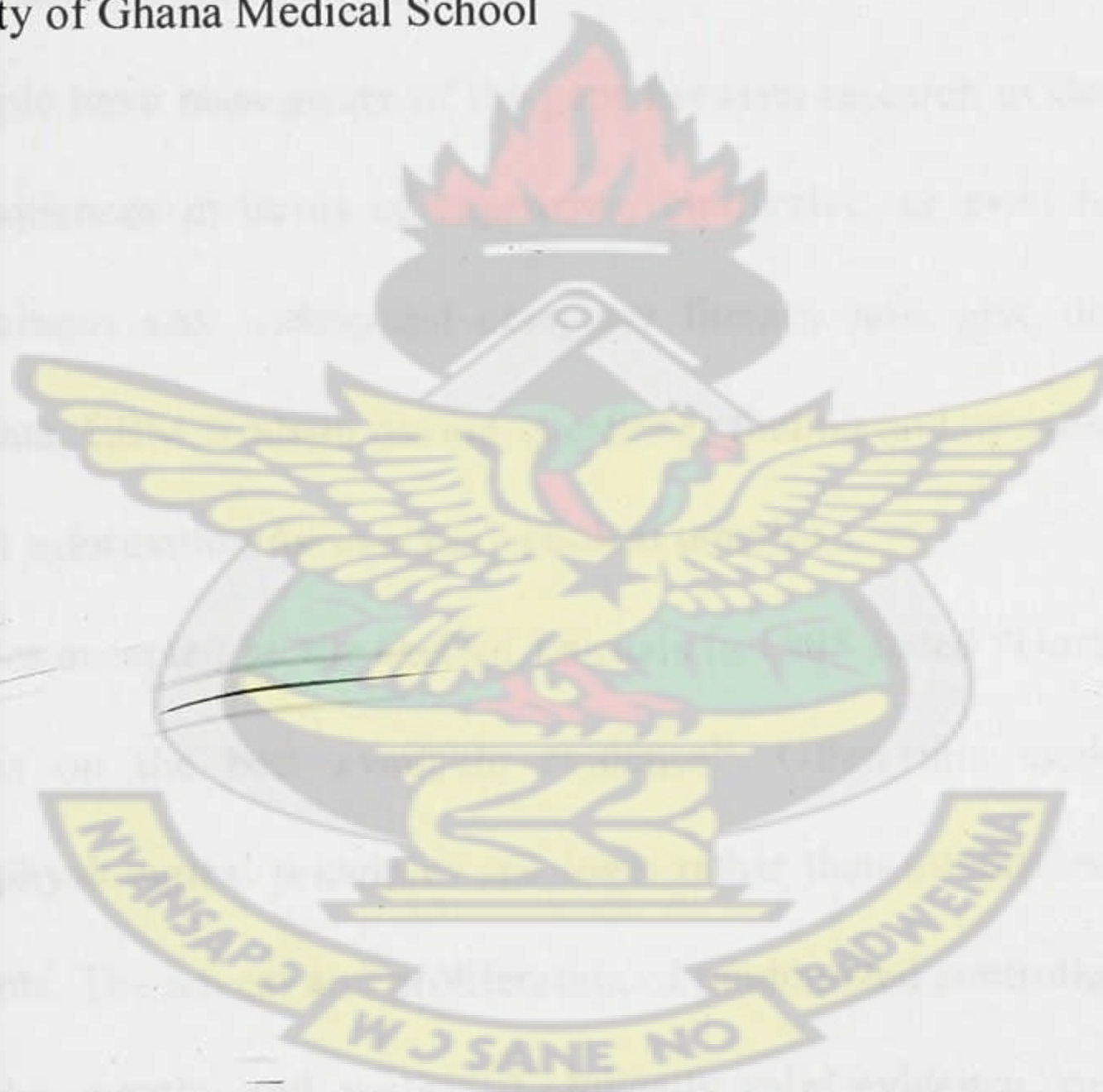
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List of Abbreviations

- ALA-American Library Association
- BMJ-British Medical Journal
- CPD- Continuous Professional Development
- CSVP-Center for the Study and Prevention of Violence
- EBMH- Evidence based Mental Health
- EBP/EBM- Evidence Based practice/ medicine
- EHR- Electronic Health Records
- ENT-Ear, Nose and Throat
- FWACP/FWACS-Fellowship West African College of Physicians/Surgeons
- GHS-Ghana Health Service
- GMA- Ghana Medical Association
- ICT-Information Communication Technology
- KATH-Komfo Anokye Teaching Hospital
- KBTH-Korle-bu Teaching Hospital
- KNUST-Kumasi Nkrumah University of Science Technology
- MATCH-Matching Alcoholism Treatments to Client Heterogeneity
- MBBS/ MBChB-Bachelor of Medicine and Surgery
- MGCS-Member of the Ghana College of Surgeons
- MOH-Ministry of Health,
- MP-Medical Practitioners
- MWACS/MGCPS- Member West African College of Physicians/Surgeons

- NIAAA-National Institute on Alcohol Abuse and Alcoholism
- OVC-Office of Victims of Crime
- PG Diploma-Post Graduate Diploma
- RCT- Randomized Controlled Trials
- SAMHSA-Substance Abuse and Mental Health Services Administration
- SPSS- Statistical Package of the Social Scientists
- UGMS-University of Ghana Medical School



CHAPTER ONE

1 INTRODUCTION

The world over in various sectors, information technology has made a great impact and the health sector has not been left out. One such area of technological advancement in health is the adoption of Evidence Based Medicine (EBM) which is defined by British Medical Journal (BMJ) group as the process of systematically finding, appraising, and using contemporaneous research findings as the basis for clinical decisions.

For decades people have been aware of the gaps between research evidence and clinical practice, and the consequences in terms of expensive, ineffective, or even harmful decision making. Electronic databases and widespread computer literacy now give doctors access to enormous amounts of data. EBM is about asking questions, finding and appraising the relevant data, and harnessing that information for everyday clinical practice.

One of the articles accepted by the Oxford Journals in 1995 stated "Doctors always seek to base their decisions on the best available evidence". Often this evidence represents extrapolations of pathophysiological principles and logic rather than established facts based on data derived from patients. The advent and proliferation of randomized controlled trials have led to a rapid increase in the quantity and quality of clinically valid evidence concerning clinical history taking and physical examination, issues of diagnosis, prognosis, therapy and other important health care issues.

As a result, it is becoming possible to make explicit much of the implicit non-verbal reasoning of expert clinicians, making their clinical reasoning more comprehensible and accessible to trainees. The ability to track down, critically appraise and incorporate evidence into clinical practice has been named 'evidence based medicine'. According to the publication as

the quantity of valid evidence increases so does the requirement for medical practitioners to develop the skills necessary to assimilate, evaluate and make best use of that evidence for patients. Often practitioners fail to identify or address their daily needs for clinically important knowledge, and this may lead to a progressive decline in their clinical competency. When practitioners do seek knowledge, they tend to the traditional sources of information, such as journals and textbooks which are often either too disorganized or out of date or often resort to asking colleagues.

The need to maintain and expand clinically important knowledge has been partially addressed by increasing demands for continuing medical education which in the long term is costly. The question then is: how can the increasing demand for continuing medical education be best achieved? Recent evaluations suggest that three evidence based medicine strategies help fulfill these goals. These include learning evidence based medicine; seeking and applying evidence based medical summaries generated by others and accepting evidence based protocols developed by others.

The issue of maximizing the use of medically generated data to make informed decision in patients care should not be limited to medical practitioners in the developed world alone. It should be a much more important approach for practitioners in the developing countries where resources needed to improve health care are scarce such as Ghana. Ghana like any other country generate a lot of medical data but the systems to collate this data, process it and store it for future retrieval to advance knowledge or improve healthcare are practically nonexistent.

The health care system in Ghana, though graded average in the developing countries, still has a long way to go in terms of technological advancement and the maximization of patient

generated data to improve patient care. In facilities where certain information systems may be available, these are often standalone and not integrated to maximize use of the data generated.

The patient to doctor ratio in Ghana is very high thus physicians do not have enough time to do individual researches into every peculiar case. That is why the practice of evidence based medicine would aid the Ghanaian physician to give the best care available under a given situation. Evidence based medicine is mentioned in the medical circles in Ghana but so far nothing concrete in terms of policy formulation and application of the subject matter has been done in the Ghana Health Service.

1.1 Background to the study

A new paradigm for medical practice has emerged. Evidence based medicine de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making and stresses the examination of evidence from clinical research. Evidence based medicine requires new skills of the physician, including efficient literature searching and the application of formal rules of evidence evaluating the clinical literature (Guyatt et al, 1992).

All over the world, there are varying schools of thoughts where evidence based medicine comes up in medical circles. Evidence based medicine, whose philosophical origins extends back to the mid-19th Century in Paris remains a hot topic for clinicians, public health practitioners, purchasers, planners and the public. Criticism has ranged from evidence based medicine being an old hat to it being a dangerous innovation, perpetrated by the arrogant to serve cost cutters and suppress clinical freedom.

As evidence based medicine continues to evolve and adapt, a lot of practitioners are learning to appreciate and adopt it. Health organizations and institutions are now finding means

of incorporating into its existing systems and also in medical school curriculum. There are now frequent workshops on how to practice and teach EBP, undergraduate and postgraduate training programmes are incorporating it or are in the process of doing so.

For instance, in 1996, the British Medical Journal (BMJ) published that British centres for evidence based practice have been established or planned in Adult medicine, Child health, Surgery, Pathology, Pharmacotherapy, Nursing, General practice and Dentistry. The Cochrane Collaboration and Britain's Centre for Review and Dissemination in York are providing systematic reviews of the effects of health care; new evidence based practice journals are being launched. It has also become a common topic in the lay media.

1.2 Problem Statement

Evidence based practice (EBP) is the product of combining research evidence with clinical knowledge and reasoning to evaluate, select and implement therapeutic techniques appropriate for specific patients (Law & Baum, 1998). The world over EBM is making great waves since its origination in the 19th century. During the last decade the evidence based movement has spread around the world. This is a remarkable achievement. The potential positive impact of evidence based practice and policy making is unquestionable, particularly on the quality of health care. This is for two prime reasons.

First, evidence based practice supports the ethical imperative to "do no harm." There is now an increased probability that individuals will receive health care that benefits them with greater protection from harmful interventions (Smith, Ebrahim, & Frankel, 2001).

The second reason is related to the need to know what works, whether at the level of specific interventions, care packages or whole services. This means that there is an equal imperative to generate robust research of clinical and cost effectiveness.

Almost all the disciplines in the health provision sector are taking steps to integrate EBM in the curriculum at school and also into their refresher training courses for practicing clinicians and other health disciplines. For instance, as part of a system-wide initiative to advance evidence based practice among clinicians, graduate students and educators the New York University Division of Nursing embarked on a curricular initiative to integrate components of information literacy in all core courses of the master's program. In the field of Occupational therapy, Evidence based practice (EBP) is like a toolbox of methods available to the Occupational therapy practitioner to aid clinical reasoning. The toolbox consists primarily of methods designed to integrate current and best evidence from research studies into the clinical reasoning process (Sackett, Richardson, Rosenberg, & Haynes, 1997).

In Ghana however evidence based medicine is mentioned in passing during policy maker's forums on ethical issues concerning patient-doctor relationships, Electronic Health Records (EHRs) and possibility or probability of adding to the health professionals' educational curriculum. Presently, there is no documental evidence of actual strides taken by any health institution or facility to adapt and or apply EBM as an institutional policy implementation. This study seeks to draw the attention of the Ministry of Health and Ghana Health Service using Korle-bu and Komfo Anokye Teaching Hospitals as studies to the seemingly lack of interest in this evolutionary practice for improving the health care services across almost all health professionals with emphasis on medical practitioners, though there are indications of physicians showing great interest in improving the health care given through EBM.

Dr. Gil Grimes a family practitioner who worked with Africa Partners Medical team in 2007 after his third visit with the team teaching on evidence based medicine said that he was really impressed with the attitude of the medical doctors who attended the workshop. According

to him, he noticed improvements on his subsequent visits in the physicians practice after the initial encounter.

1.3 Research Objectives

This research seeks to add to existing knowledge by focusing on the perception of medical practitioners in the Ghana Health public service specifically those in the two main public hospitals (Korle-bu and Komfo Anokye Teaching Hospitals) in relation to the practice of evidence based medicine, its applicability and practicability in the public health facilities.

1.3.1 Specific Objectives

The following are the specific objectives of this research:

- To establish whether or not there are specific policies and laws that the Ghana Health Service has in place to promote the practice of EBM;
- To establish the level of awareness and readiness of medical practitioners in the public service in relation to the practice of evidence based medicine in the public health facilities;
- To investigate the socio-cultural and economic conditions that influence the perceptions of medical practitioners in the public service in relation to EBM;
- To establish the challenges both perceived and real in the adaptability of the practice of EBM;
- To determine which category of medical practitioners are for or against the adaption of EBM in the public health centers.

1.4 Research Questions

- How does knowledge of EBP affects the ability to apply and attitude toward adaptability in diagnosis and treatment of patients that visits public health

facilities?

- Are there any policies and laws that the Ghana Health Service has in place to promote the practice of EBP adaptation?
- What is the level of awareness and readiness of medical practitioners in the public service in relation to the practice of evidence based medicine in the public health facilities?
- Are socio-cultural and economic conditions influencing the perceptions of medical practitioners in the public service in relation to EBP?
- Can the challenges of adaptability of the EBP practices be the contributing factor in the public health centers?
- Are there categories of medical practitioners who are for or against the adaption of EBP in the public health centers?

1.5 Scope and Limitations of Study

Scope

The scope of the study was the staff of Korle-bu and Komfo Anokye Teaching Hospitals in Accra and Kumasi respectively. These two health facilities were chosen mainly because they represent the major hospitals in the country and have a fair number of the representatives in the various categories used in this research.

Limitations

A major limitation to this study is the general attitude to respondents in response to the questionnaire. Also due to inadequacy of funds the study was limited to the staff of Korle-bu and Komfo Anokye Teaching Hospitals. The retrieval of data was also a problem as the

researcher has to make several trips to the hospital to collect the response because of the nature of work of the respondents.

1.6 Organization of the thesis

This thesis is made up of five chapters.

Chapter one consists of introduction, background of the study, statement of the problem, purpose of the problem, the objectives of the study, Scope of the study area, limitations of the study and organization of the study.

Chapter two reviewed work on Evidence based Medicine/Practice by other researchers, books and articles.

Chapter three shows the methodology used for this study elaborating on the sampling, sample size and techniques used in collecting the data for the study.

Chapter four deals with the presentation and interpretation of the data gathered from the field survey.

Finally, chapter five draws conclusions, summarizes the findings and makes recommendations for future research.

CHAPTER TWO

2 LITERATURE REVIEW

This chapter reviewed work on Evidence based Medicine/Practice by other researchers, books and articles. It also deliberates on the various perspectives by other researchers.

2.1 Origin and Definition of Evidence Based Practice

In an age in which new research in medicine and the social sciences is reported almost daily, and the pace of change overwhelming, the consumer is viewed as educated and thus well informed; however, the reality is that few individuals have the ability or the time to sift through the available data to make informed decisions. Instead, many individuals expect healthcare professionals to have the knowledge base to determine which treatment methodologies will result in the most positive outcomes with the least cost in terms of suffering, time and money. Because of the trust placed in them, healthcare professionals have a fiduciary duty (Roberts & Yeager, 2004) and moral responsibility (Hancock & Easen, 2004) to acquire the knowledge required to answer the question "What do you recommend?" based on the best available scientific information.

Bridging health and human services with scientific research inquiry, also known as evidence based practice, emerged towards the end of the 20th century and proliferated worldwide in the early 21st century within major universities, family treatment centers, and medical and mental health centers across the world (Roberts & Yeager, 2004). Evidence based practice has its roots in evidence based medicine, which was coined in the 1980s as a term for the clinical learning strategy developed at McMaster Medical School in Canada (Cliff, Harte, Kirschling, & Owens, 2004 Cutspec, 2004a; Guyatt & Rennie, 2002 as cited in Singh & Oswald, 2004;

Rosenberg & Donald, 1995; Rosenthal, 2004). In fact, the leading discipline in the application of evidence based practice is medicine.

In medicine and other disciplines, the most frequently cited definition of evidence based medicine is provided by Sackett and colleagues (i.e., Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996) who indicate that “evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients”. For Sackett and colleagues evidence based medicine is the “integration of best research evidence with clinical expertise and patient values” (Sackett et al. 2000, p. 1, as cited in Shlonsky & Gibbs, 2004). As an extension of evidence based medicine, Proctor and Rosen (2004) suggest that evidence based practice is comprised of three assertions:

1. Intervention decisions based on empirical, research-based support;
2. Critical assessment of empirically supported interventions to determine their fit to and appropriateness for the practice situation at hand; and
3. Regular monitoring and revision of the course of treatment based on outcome evaluation.

EBP has also been defined by Levine variously as: An approach to practice that requires the examination of research findings from systematic clinical research (e.g. Randomized controlled clinical research) in making decisions about the care of a specific population with a specific problem.; The process of critically identifying and employing treatment or practice approaches that have the strongest basis of empirical support for attaining desired outcomes; Any practice that has been established as effective through scientific research according to a set of explicit criteria. A way of practicing in which the practitioner critically uses best evidence, expertise, and values to make practice decisions that matter to individual service recipients (Levine 2004).


2.1.1 Steps in Evidence Based Practice

Generally, there are a series of steps to be taken in making practice decisions based on the best available evidence. The first step is to evaluate the problem to be addressed and formulate answerable questions. This step involves identifying and obtaining information about interventions that have been empirically tested and supported. The next step is to gather and critically evaluate the evidence available. In general, evidence is ranked hierarchically according to its scientific strength (see Table 2.1 below).

Depending on the length of time and settings in which they have been used (including resources available to conduct evaluations), various interventions will have been evaluated more frequently and rigorously. Therefore, for newer interventions, only Level 4 evidence may be available (see Table 2.1 below). Roberts and Yeager (2004) suggest that in such cases, practitioners should use the intervention with caution, continue to search for evidence of its efficacy, and be prepared to evaluate the intervention's efficacy in their own practice. The final steps involve applying the results of the assessment to practice or policy and then continuously monitoring the outcome.

To understand the definition of evidence based practice, it is important to begin with a common understanding of its overlap and distinction from practice-based research. Evidence based practice emphasizes the practitioner's use of scientifically validated assessment, intervention, and evaluation procedures; and the practitioner's use of critical thinking when making practice decisions that matter to service recipients. Practice based research refers to scientifically investigating issues related to practice, which may or may not specifically address questions of practice effectiveness.

Table 2-1 : Levels of Evidence

	LEVEL	DESCRIPTION
	1 (Most rigor)	Meta-analysis or replicated randomized controlled trials (RCT)ii that include a placebo condition/control trial or are from well-designed cohort or case control analytic study, preferably from more than one center or research group, or national consensus panel recommendations based on controlled, randomized studies, which are systematically reviewed.
	2	At least one RCT with placebo or active comparison condition, evidence obtained from multiple time series with or without intervention, or national consensus panel recommendations based on uncontrolled studies with positive outcomes or based on studies showing dramatic effects of interventions.
	3	Uncontrolled trial, observational study with 10 or more subjects, or opinions of respected authorities, based on clinical experiences, descriptive studies, or reports of expert consensus.
	4 (Least rigor)	Anecdotal case reports, Unsystematic clinical observation, Descriptive reports, Case studies, and/or Single-subject designs.

Source: Roberts and Yeager (2004).

Roberts and Yeager (2004) indicate that while there are overlaps between practice-based research and evidence based practice, generally speaking, practice-based research serves as the springboard for the development of evidence based practice. Stated differently, practice-based research is the foundation for evidence based care. Roberts and Yeager further provide two explanations forming the basis for differences present within the understanding and operational definitions of evidence based practice:

1. There are differences both within and between disciplines when addressing various approaches to similar problems with evidence based care; and
2. Source data contributing to the evidence based practice foundation does not currently lend itself to the infusion of new knowledge gained from practice settings.

To better understand the second explanation, it is important to note that “source data” refers to three general sources, namely, systematic reviews practice guidelines, and expert consensus guidelines. Applying information from these sources to practice is never easy, particularly because there has been more success in developing evidence based practice information than in dissemination. Moreover, using evidence based practice is challenging because the information that is available has variability in accuracy and utility and therefore, must be weighed by the practitioner to determine its application. On top of this challenge, is the fact that evidence for practice is growing so rapidly that keeping up with the literature is a formidable task even for the most committed and seasoned practitioner.

2.2 Perspectives on Evidence based Practice

It is important to note that the concept of evidence based practice is perhaps one of the most important ideas the social sciences have investigated in recent years. Even a cursory glance at the literature reveals a burgeoning interest in evidence based practice. For example, a PsychINFO search indicates an astounding increase in the number of hits on the key term “evidence based practice” between the mid-1980s and up until the writing of this review. Moreover, since the mid-1990s, the following journals have been founded with “evidence based” in some form or function as their focus: Evidence based Mental Health (EBMH), Evidence based Nursing, and Evidence based Medicine. Even a Google search on the keyword “evidence based practice” yields over 130,000,000 hits.

Evidence based practice (EBP) involves complex and conscientious decision-making which is based not only on the available evidence but also on patient characteristics, situations, and preferences. It recognizes that care is individualized and ever changing and involves uncertainties and probabilities. EBP develops individualized guidelines of best practices to

inform the improvement of whatever professional task is at hand. Evidence based practice is a philosophical approach that is in opposition to rules of thumb, folklore, and tradition. Examples of a reliance on "the way it was always done" can be found in almost every profession, even when those practices are contradicted by new and better information.

However, in spite of the enthusiasm for EBP over the last decade or two, some authors have redefined EBP in ways that contradict, or at least add other factors to, the original emphasis on empirical research foundations. For example, EBP may be defined as treatment choices based not only on outcome research but also on practice wisdom (the experience of the clinician) and on family values (the preferences and assumptions of a client and his or her family or subculture). (Buysse, V., & Wesley, P.W. 2006) Research oriented scientists, as opposed to authors, test whether particular practices work better for different subcultures or personality types, rather than just accept received wisdom.

For example, the Matching Alcoholism Treatments to Client Heterogeneity (MATCH) Study run at many sites around the US by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) tested whether particular types of clients with alcohol dependence would benefit differentially from three different treatment approaches to which they were randomly assigned. The idea was not to test the approaches but the matching of clients to treatments, and though this missed the question of client choice, it did demonstrate a lack of difference between the different approaches regardless of most client characteristics. The exception was that clients with high anger scores did better with the non-confrontational Motivational Enhancement approach which has been demonstrated superior in a meta-analysis of alcohol treatment outcome research and only required four as opposed to twelve sessions within Project MATCH (Journal of Studies in Alcoholism, 1997).

The theories of evidence based practice are becoming more commonplace in nursing care. Nurses who are “baccalaureate prepared are expected to seek out and collaborate with other types of nurses to demonstrate the positives of a practice that is based on evidence.” (Duffy P. et al 2008) Looking at a few types of articles to examine how this type of practice has influenced the standard of care is important but rarely internally valid. None of the articles specify what their biases are. Evidence based practice has gotten its reputation by examining the reasons why any and all procedures, treatments, and medicines are given. This is important for refining practice so the goal of assuring patient safety is met (Duffy P. et al February 2008).

Education is also being affected by evidence based practice. That is, at least one school of social work, namely, the George Warren Brown School of Social Work at Washington University, has identified evidence based practice as the organizational framework for its graduate curriculum (Howard, McMillen, & Pollio, 2003 as cited in Jenson, 2005). At the University of Denver, in the Graduate School of Social Work, Jenson (2005) and others are exploring ways to disseminate and link evidence based practice to state and local foundations and agencies.

With a plethora of information available, making sense of the evidence based practice movement can seem overwhelming. It's no wonder that evidence based practice is quickly becoming a buzzword and perhaps in danger of becoming a fad (Blome & Steib, 2004; Chaffin & Friedrich, 2004; Rycroft-Malone, Seers, Titchen, Harvey, Kitson, & McCormack, 2004). Critics point out that there is little relevant research available regarding most questions that a practitioner asks; and argue that much of the research that is available is of little use because so many scientific studies are conducted in contexts that have little resemblance to realistic practice situations.

However, in their highly influential book, *Evidence based Practice Manual: Research and Outcome Measures in the Health and Human Services*, Roberts and Yeager (2004) attempt to consolidate state-of-the-art evidence based knowledge so that graduate students and practitioners in the medical and human services professions have all of the latest research and evaluation guidelines, research exemplars, and evidence based protocols in one volume. Their book is probably the most comprehensive treatment of evidence based practice and the only interdisciplinary volume available for locating and applying evidence based assessment measures, treatment plans, and interventions. The Evidence based Practice Manual emphasizes and summarizes key elements, issues, concepts, and how-to approaches in the development and application of evidence based practice. The manual includes concise summaries of the substantive evidence gained from methodologically rigorous quantitative and qualitative research, making it an accessible resource for a broad range of practitioners facing the mandate of evidence based practice in the health and human services. Applying evidence based practice approaches is currently considered the industry standard in many helping disciplines, from medicine to managed mental health care (Corcoran & Vandiver, 2004; Stoil, 2004).

It has also been suggested that evidence based practices have emerged as “the solution du jour” for the U.S. Department of Health and Human Services (Stoil, 2004). Consequently, the very definition of evidence based practice has become more elusive and perhaps ambiguous. There are numerous terms being used around the country to describe the delivery of health and human services from “emerging practice” to “promising practice,” “best practice,” “evidence informed practice,” “science based practice” and “evidence based practice.” While some restrict the term evidence based practice to systematic reviews using meta-analytic procedures, others

use a wider scope that may include less rigorous studies and influential case studies or expert consensus guidelines.

The point is that a number of these terms have very specific meaning to some professionals but others may use the same term in dramatically different ways, illustrating that there is no consensus on, or regulation of, what exactly constitutes an evidence based practice because of variations in fidelity and implementation issues (Chaffin & Friedrich, 2004; Helfand, 2005; Jenson, 2005). A practice can have rigorous evidence to support it, a detailed manual, and perform well with a variety of clients in controlled research studies, but still not meet practical considerations that determine its applicability to the field. For example, if it is expensive to train staff, if the manuals are pricy or if insurance or other forms of payment do not cover the intervention, the practice may be deemed useless in the field. More importantly, as Jenson (2005) points out, untested interventions marketed as evidence based under such names as “best practices” or “exemplary programs” promotes a false sense of efficacy, erodes the basic principles of evidence based practice, and dilutes commonly accepted definitions of evidence based practice used in medicine and psychology.

It is important to note that in many areas of social science, practices cannot be simply divided into “evidence based” and “non-evidence based.” Instead, efforts to classify evidence based practice have assessed practices along a continuum from highly research supported practices on one end to very questionable and concerning practices that lack even a sound theoretical or common sense bias, or that may even be harmful, on the other end. For example, classification schemes have been developed by the American Public Human Services Association (2005), the National Crime Victims Research and Treatment Center, funded by the Office of Victims of Crime (OVC) (Saunders, Berliner, & Hanson, 2004), and the Substance

Abuse and Mental Health Services Administration (SAMHSA) (2006). In similar efforts, terms like “model program”, “well-established”, or “promising program” reflect the amount of evidence that supports the practice with the definitions and terminology differing from one set of criteria to the next.

Across disciplines a number of different criteria sets for evidence based practices have been developed to guide the review of programs, for example, criteria for empirically evaluating psychosocial treatments developed by the American Psychological Association Task Force on Promotion and Dissemination of Psychological Procedures (as cited in Lonigan, Elbert, & Johnson, 1998); and the standards of evidence developed by the Society for Prevention Research (2004). Having a basic understanding of what is meant by evidence based practice is helpful but it is also important to know what evidence based practice does not mean. First, it does not necessarily mean that only practices meeting the highest possible criteria for scientific evidence should be used. Second, it does not imply that a complete body of rigorous research must exist for all potential outcomes or with all potential population subgroups before evidence based practice can be realized.

As Chaffin and Friedrich (2004) acknowledge, in child maltreatment for example, very few intervention models meet the high standards required to designate a model as “well-supported.” They point out that evidence based practice simply means favoring the best supported available practices. That is, where well-supported or empirically validated practices are available, they may be synonymous with evidence based practice. Where there are no fully supported interventions, Chaffin and Friedrich suggest that one must pick from among competing models with varying levels of support.

While the level of evidence is critical to identifying a practice as evidence based, it might be helpful to consider a reframing of what could be meant by evidence. Rycroft-Malone, Seers, Titchen, Harvey, Kitson, and McCormack (2004) suggest that the delivery of effective, evidence based patient-centered care will only be realized when a broader definition of what counts as evidence is embraced. They propose that 'evidence' in evidence based practice should be considered to be 'knowledge derived from a variety of sources that has been subjected to testing and has been found to be credible' (Higgs & Jones, 2000, p.311 as cited in Rycroft Malone et al., 2004). Essentially, they suggest that practitioners need to draw on and integrate multiple sources of propositional and non-propositional knowledge informed by a variety of evidence bases that have been critically and publicly scrutinized. The evidence bases are named according to their source: research, clinical experience, patient experience, and information from the local context. Drawing on these four sources of evidence will require bridging two approaches to care: the scientific and the intuitive.

Rycroft-Malone et al. (2004) recognize that the challenge is to ensure that each type of evidence is as robust as possible, while ensuring that individualized care is delivered. Another approach toward reframing or operationally defining evidence based practice has been proposed by Dunst, Trivette and Cutspec (2002). They suggest that evidence based practices can be defined as "practices that are informed by research, in which the characteristics and consequences of environmental variables are empirically established and the relationship directly informs what a practitioner can do to produce a desired outcome".

Dunst et al. (2002) point out that their operational definition has a two-pronged emphasis: on one hand it focuses attention on the empirical relationship between the characteristics and consequences of a practice or intervention, while on the other hand, it demands that the ways in

which the relationships are established directly inform how practitioners implement evidence based practices. They explain that it is the latter that distinguishes their definition from most other approaches to establish evidence based practices.

2.3 Methodology for Evidence based Practice

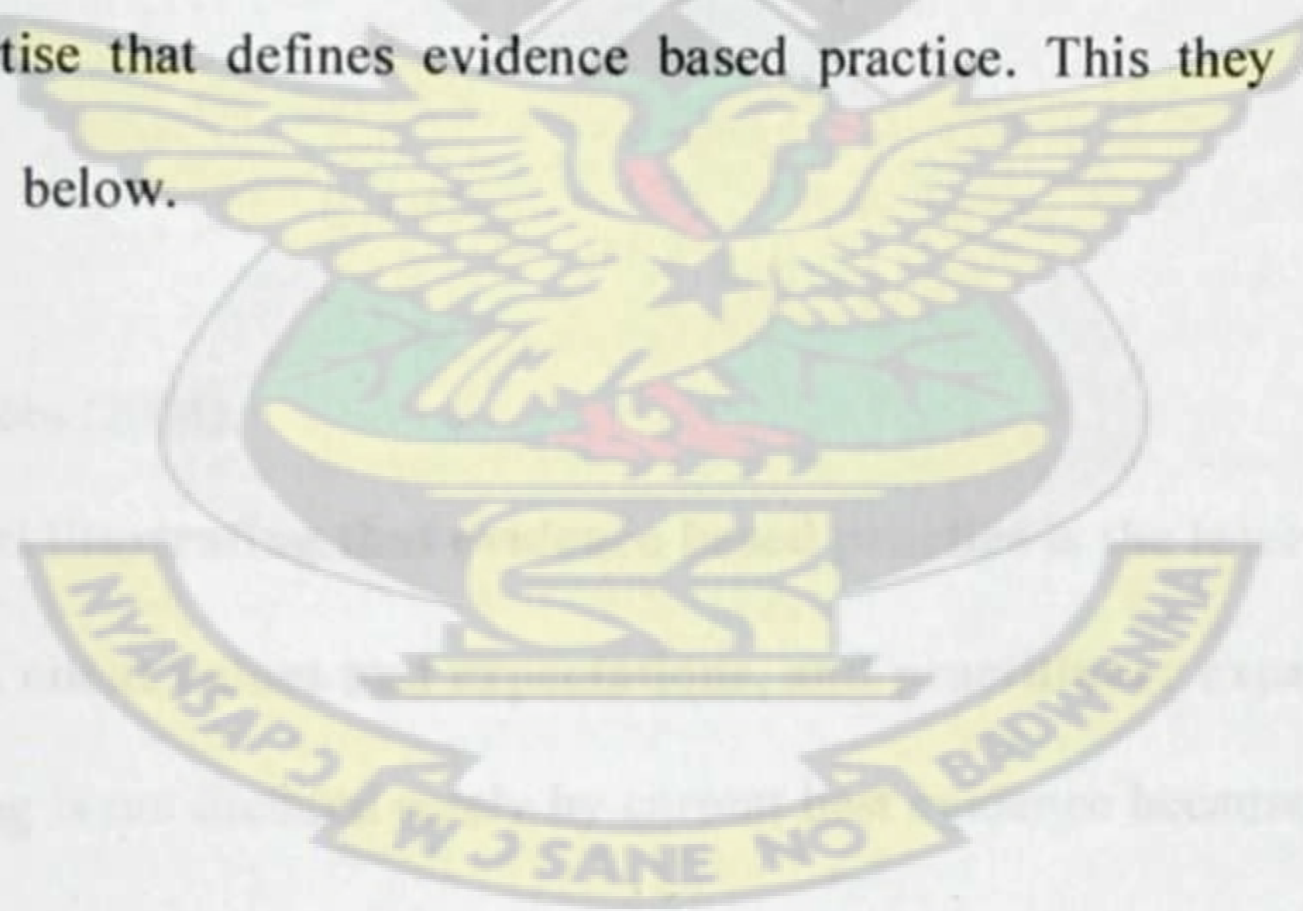
Evidence based decision making in medicine is done by asking questions, finding, and appraising relevant data, and using that information in the form of reliable estimates of benefit and harm (Rosenberg & Donald, 1995). This approach requires integrating individual clinical expertise with the best available clinical evidence from systematic research. Thus, evidence based medicine is the process of systematically finding, appraising, and using current research findings as the basis for clinical decisions.

As applied to the helping professions, this process is generally described as having five well-defined steps that all practitioners can follow, if they have access to electronic databases. Sackett et al. (2000, p.3-4, as cited in Shlonsky & Gibbs, 2004) propose the following steps:

- Step 1: Converting the need for information (about prevention, diagnosis, prognosis, therapy, causation, etc.) into an answerable question.
- Step 2: Tracking down the best evidence with which to answer the question.
- Step 3: Critically appraising that evidence for its validity (closeness to the truth), impact (size of the effect), and applicability (usefulness in clinical practice).
- Step 4: Integrating the critical appraisal with clinical expertise and with the patient's unique biology, values, and circumstances.
- Step 5: Evaluating effectiveness and efficiency in executing Steps 1 through 4 and seeking ways to improve them both for the next time.

The evidence based practice approach is a bottom-up method that outlines how an individual practitioner can incorporate research into daily decision making. It empowers individual practitioners and clients to actively collaborate in making decisions about treatment. Ultimately, evidence based practice is about cultural change within an agency. That is, the approach extends to administrators in human service agencies who should create a culture of inquiry where practitioners are given time and resources to search for relevant information.

The decision making here in spite of the steps given above is not dependent on the practitioner alone. Rather to make EBP effective and efficient, it has to be the “integration of best research evidence with clinical expertise and patient values” (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000, p. 1, as cited in Shlonsky & Gibbs, 2004). Shlonsky and Gibbs (2004) suggest that it is the intersection of current best evidence, client values and expectations, and practitioner expertise that defines evidence based practice. This they suggested is best illustrated in Figure 2.1 below.





Source: Shlonsky and Gibbs (2004).

Figure 2-1: EBP model illustrating that evidence based practice is the intersection of current best evidence, client values and expectations, and practitioner expertise

Decision making is not dictated solely by current best evidence because none of the three core elements stand alone. Rather, the core elements work together by using practitioner skills to develop a client-sensitive case plan that uses interventions with a history of effectiveness. If there is an absence of relevant evidence, then the other two elements are weighted more heavily. However, in the presence of overwhelming evidence, the best evidence element might be weighted more heavily.

2.3.1 Essential Skills & Ingredients for Evidence based Practice

One essential skill for evidence based practice is the ability to think critically. Critical thinking is the disciplined ability and desire to assess evidence. It is an active effort to seek a breadth of contradicting as well as confirming information, to make objective judgments on the basis of well-supported reasons as a guide to belief and action, and to monitor one's thinking while doing so (metacognition). The thought processes necessary and appropriate for critical thinking depend on the knowledge domain (e.g., scientific, mathematical, historical, anthropological, economic, philosophical, moral).

Critical thinking demonstrates universal criteria: clarity, accuracy, precision, consistency, relevance, sound empirical evidence, good reasons, depth, breadth, and fairness (Levine, 2004). Rapid critical appraisal of Randomized Controlled Trials (RCTs) is another essential skill for evidence based practice. Mazurek Melnyk and Fineout-Overholt (2005) developed a checklist for the rapid appraisal of an RCT that appears to be very helpful. Once a critical appraisal has been conducted and it is determined that a practice is backed by rigorous evidence, then the practice must be weighed against criteria regarding its theoretical soundness, clinical support, acceptance within the field, potential for harm, documentation, and empirical support.

However, in the absence of rigorous evidence, practical considerations (i.e., practitioner's individual expertise and/or client values and expectations) may be weighted more heavily. However, in the presence of overwhelming evidence, it is the best evidence that is weighted more heavily. Generally, evidence is ranked hierarchically according to its scientific strength and there are various hierarchies of evidence to choose from (e.g., see Geddes, 1999 and Roberts & Yeager, 2004).

Information literacy is another essential ingredient to evidence based practice (Skiba, 2005). Therefore, it is important to assess practitioners' information literacy knowledge and competency and their access to research information. The American Library Association (ALA) first introduced the concept of information literacy in 1989 (as cited in Skiba, 2005). Their definition states: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (American Library Association, 1989, p.1 as cited in Skiba, 2005). Following the ALA report, many disciplines embraced the concept and incorporated it into their curricula.

Here are some questions that program administrators and Chapter executive directors could ask their staff to ensure that practitioners in their organization have the necessary information literacy skills for evidence based practice:

- What is your level of knowledge and skills in information literacy?
- What resources are available to help practitioners develop, maintain and expand their knowledge and skills? Are there resources at the public library or on the Web that might prove beneficial?
- Does your organization provide an information literacy course?
- How is information literacy assessed?

The aforementioned questions can be used to determine if information literacy is low and to inform steps to address improvements.

2.4 Development and Implementation of Evidence based Practice

The Institute of Medicine (2001, as cited in Chaffin & Friedrich, 2004) estimates that it may require around 17 years for a new technology to make its way into widespread clinical use in medicine. This estimation suggests that the implementation of evidence based practice is a

complex undertaking. With regard to the uptake of evidence based practice in child maltreatment service settings, the Kauffman Best Practices Project (2004) identified barriers at various levels including policy, community, organization, and individual factors. Among other things, structural problems with funding, lack of advocacy, lack of incentives that link rewards to client outcomes, lack of marketing of evidence based practices, and the absence of a tradition of agencies as “learning organizations” that value rigorous outcome evaluation were identified as barriers to the uptake of evidence based practice in child abuse agencies. The implication for moving child abuse prevention services toward evidence based practice is that it will require a combination of organizational leadership, policy changes, and marketing. Chaffin and Friedrich (2004) suggest that the path toward evolutionary progress and refined interventions may lie in researcher-practitioner collaborative partnerships “to innovate and refine models, systematically test the results, then feed this information back into the service system.”

In the development and implementation of evidence based practice, Blome and Steib (2004) point to the lessons that could be learned from other fields, such as medicine and organizational management, which have already learned that dissemination of information about research is necessary, but not sufficient to change practice. Like Chaffin and Friedrich (2004) who suggest that research become more like practice and practice become more like research, Blome and Steib suggest that evidence based change requires both an understanding of the questions research answers as well as those as it raises, and that it requires assessing needs, targeting change, and tracking and measuring both process and outcomes.

Kitson, Harvey, and McCormack (1998) suggest that successful implementation of research into practice is a function of the interplay of three core elements:

- (1) The level and nature of the evidence;

- (2) The context or environment in which the research is to be placed; and
- (3) The method or way in which the process is facilitated.

Further, they propose that because current research is inconclusive as to which of these elements is most important in successful implementation, they all should have equal standing. This proposition is contrary to the often implicit assumption currently held where the level of evidence seems to be the most important factor for consideration. The authors offer a conceptual framework that considers this imbalance, showing how it might work in clarifying some theoretical positions and as a checklist for healthcare staff to assess what they need to do successfully to implement research into practice. Initial tests of the framework showed limited construct and face validity. However, based on later refinements to the framework, anecdotal reports suggest that the framework has a good level of validity (Rycroft-Malone, Kitson, Harvey, McCormack, Seers, Titchen, & Estabrooks, 2002). The authors plan to develop it into a practical tool to aid those involved in planning, implementing, and evaluating the impact of changes in healthcare.

For the successful uptake of research into practice it seems that individual approaches to implementing evidence based practice, such as developing critical thinking skills among practitioners to appraise research evidence, will be ineffective by themselves (Rycroft-Malone, Harvey, Seers, Kitson, McCormack, & Titchen, 2004), especially considering barriers to research utilization that challenge practitioners (e.g., insufficient time to implement new ideas, inadequate resources for implementation, not knowing what research is available or not having time to read research, etc.). Therefore, in addition to developing the skills of practitioners, evidence based practice must be prioritized within an organization's agenda and aligned with resources that are appropriately allocated, targeted, and managed. Moreover, managerial support,

facilitation, and a culture that is receptive to change are essential (Gerrish & Clayton, 2004; see also Cutspec, 2004a for a good overview of barriers to moving research to practice; and Cutspec, 2004b for more information on bridging the gap between research and practice).

2.5 Dissemination of Evidence based Practice

Despite the substantial literature on evidence based clinical care practices that have proven effective in controlled environments and trials, a major challenge for health care systems has been to spread these advances broadly and rapidly. The literature suggests that it takes an average of nine years for interventions that are recommended as evidence based practice in systematic reviews, guidelines, or textbooks to be fully implemented. Such a sizeable research–practice gap raises the question of why new ideas and actions are not spread and adopted faster.

A major provision of evidence based practice requires that efficacious interventions be available to the broader practice community (Jenson, 2005).

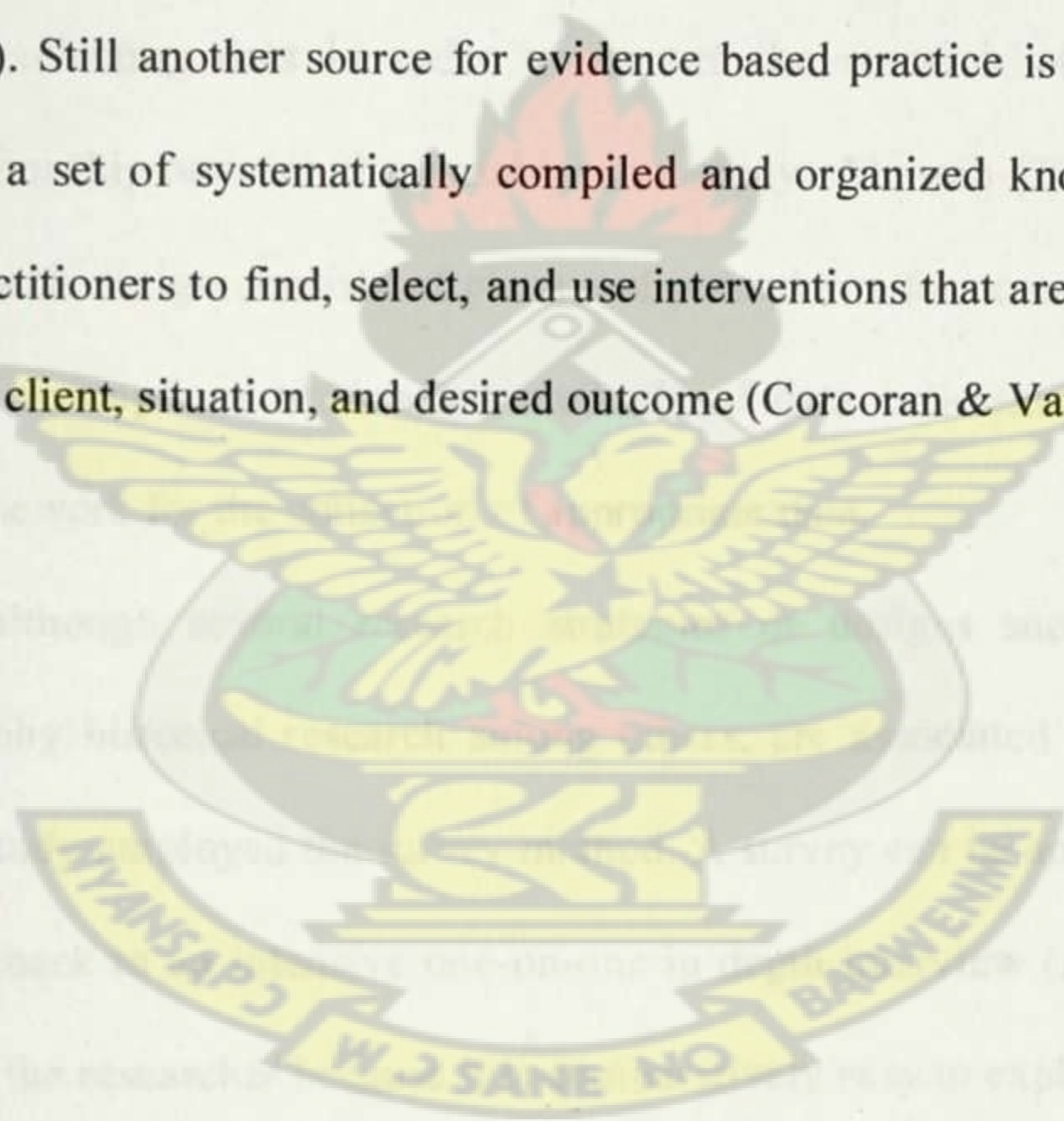
Three methods that are used to relay information about efficacious interventions to practitioners include:

- (1) Systematic reviews organized that detail the effects of interventions on specified outcomes;
- (2) Published “lists” of effective programs by federal agencies and research centers; and
- (3) Practice guidelines that offer treatment protocols based on empirical evidence.

Leadership for the dissemination of systematic reviews has come from international interdisciplinary teams organized under the Campbell Collaboration and the Cochrane Collaboration (website). These groups disseminate the results of systematic reviews to inform practitioners about the effects of interventions in health, behavioral, educational, and social settings. Another dissemination approach has been organized by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Center for the Study and Prevention

of Violence (CSPV) at the University of Colorado (as cited in Jenson, 2005). SAMHSA publishes a list of efficacious substance abuse prevention and treatment programs in the National Registry of Evidence based Programs and Practices (<http://www.modelprograms.samhsa.gov>). CSPV identifies effective violence prevention programs as part of its Blueprints for Violence Prevention dissemination efforts (<http://www.colorado.edu.cspv.html>).

Another government agency taking up the clarion call for promoting evidence based practice is the Agency for Healthcare, Research, and Quality, which has as its mission “to improve the quality, safety, efficiency, and effectiveness of health care for all Americans” (as cited in Barlow, 2005). Still another source for evidence based practice is the use of practice guidelines, which are a set of systematically compiled and organized knowledge statements designed to enable practitioners to find, select, and use interventions that are most effective and appropriate for a given client, situation, and desired outcome (Corcoran & Vandiver, 2004).



CHAPTER THREE

3 METHODOLOGY AND CASE STUDY

This chapter focuses on the case study and discusses the processes followed in collecting and analyzing data collected.

3.1 Research Design

The research design adopted for this study was quantitative approach which involves constructing questionnaires with both open-ended and close-ended questions to enable the researcher gather broad and quantifiable data. According to Creswell (2009), research design is the overall plan for collecting data in order to answer the research objectives and draw conclusions about relationship between the variables in a study. Mensah (2011) citing Creswell (2009) states that research design consists of plans and procedures for research which span the decisions from broad assumptions to detailed methods of data collection and analysis, and provides a general framework for the collection of appropriate data.

Nevertheless, although several research strategies or designs such as case studies: surveys, and ethnography historical research among others, are associated with social science research, this present study employed the survey method. A survey can be anything from a short paper-and-pencil feedback to an intensive one-on-one in depth interview (Asante, 2000). This method was chosen by the researcher because it is comparatively easy to explain and understand, it is cost effective (saves time and money without sacrificing the efficiency, accuracy and information adequacy in the research process); it gives the researcher more control over the research process and can be conducted by a single researcher (Saunders et al, 2007).

Although various approaches are used in research design, the two widely recognized ones are the quantitative and qualitative approaches. Tagoe (2009) observed that, quantitative

research uses problem solving approach that is highly structured in nature and relies on the quantification of concepts where possible for the purpose of evaluation. This method was chosen for this study in order to gain a deeper understanding into the subject matter of the current level of adaption and application of evidence based medicine among medical practitioners in the public sector in diagnosis and treatment.

3.2 Population of Study

The population is the group of interest to the researcher. It is the group to whom the researcher would like to generalize the results of the study. The population for this present study comprised all the medical officers of Korle-Bu and Komfo Anokye Teaching Hospitals which have a total population of about 691. KBTH has about 326 MPs made up of 123 specialists (consultants), 184 medical officers (senior/junior doctors) and 19 house officers (junior doctors). KATH has about 365 MPs made up of 120 specialists (consultants), 197 medical officers (senior/junior doctors) and 48 house officers (junior doctors). These population figures were as at May 2013 (GHS records May 2013). The two hospitals have the Legon Medical School and KNUST Medical School attached to them respectively.

3.2.1 Profile of the Study Settings

Komfo Anokye Teaching Hospital (KATH)

The Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana, is the second-largest hospital in Ghana and the only tertiary health institution in the Ashanti Region. It is the main referral hospital for the Ashanti, Brong Ahafo, Northern, Upper East and Upper West Regions. The hospital was built in 1954 as the Kumasi Central Hospital. It was later named Komfo Anokye Hospital after Okomfo Anokye, a legendary fetish priest of the Ashanti. It was converted

into a teaching hospital in 1975 affiliated to the medical school of the Kwame Nkrumah University of Science and Technology.

The hospital is also accredited for postgraduate training by the West African College of Surgeons in Surgery, Obstetrics and Gynaecology, Otorhinolaryngology, Ophthalmology and Radiology. The hospital currently has about 1000 beds, up from the initial 500 when first built.

(KATH website)

Korle-Bu Teaching Hospital (KBTH)

Established on October 9, 1923, the Korle-Bu Teaching Hospital has grown from an initial 200 bed capacity to 2,000. It is currently the third largest hospital in Africa and the leading national referral center in Ghana (Hospital website). Korle-Bu, which means 'the valley of the Korle lagoon', was established as a General Hospital to address the health needs of the indigenous people under Sir Gordon Guggisberg's administration, the then Governor of the Gold Coast. Korle-Bu gained teaching hospital status in 1962, when the University of Ghana Medical School (UGMS) was established for the training of medical doctors.

The UGMS and five other constituent schools are now subsumed under the College of Health Sciences to train an array of health professionals. All the institutions of the College however, undertake their clinical training and research in the Hospital. At the moment, the Hospital has 2,000 beds and 17 clinical and diagnostic Departments/Units. It has an average daily attendance of 1,500 patients and about 250 patient admissions.

The Hospital also provides sophisticated and scientific investigative procedures and specialization in various fields such as Neuro-surgery, Dentistry, Eye, ENT, Renal, Orthopaedics, Oncology, Dermatology, Cardiothoracic, Radiotherapy, Radio diagnosis, Paediatric Surgery and Reconstructive Plastic Surgery and Burns. (KBTH website)

3.3 Sample Size and Sampling Method

A sample is a subset of the population being studied. Samples should be as large as possible, in general the larger the sample the more representative and the more generalizable the results of the study are likely to be. For the purpose of this study, the sample was drawn from the Korle-Bu and Komfo Anokye Teaching Hospitals. Alreck and Settle (1985) also stated that a sample size of 10% of the population is enough to obtain adequate confidence. With this fact the researcher used 14.4% of the total number of respondents giving us a sample size of one hundred (100) out of a population of about six hundred and ninety one (691) MPs in both facilities. Each facility had fifty respondents.

The sampling technique that was used for the work was purposive sampling method and convenience sampling method. Purposive sampling was used because the researcher has prior knowledge about the accessible population. This was used specifically for the medical practitioners of the two Hospitals under study. This was because the medical practitioners have special knowledge on the use of EBP since they take decision on diagnosis and treatment of patients. The respondents were stratified into departments and the convenience sampling method was used to select the accessible population. The respondents were selected at random from each department to answer the questionnaires. The questionnaire was administered on both male and female MPs from ages 21 to 70 years who were randomly selected.

3.4 Sources of Data

Information used for this study was gathered from two main sources; primary and secondary.

3.4.1 Primary Sources

The major primary sources used were interviews with Ministry Of Health, Ghana Health Service, Ghana Medical Association, Legon Medical School and KNUST Medical School; interactions

with Medical Practitioners (MP) and questionnaires administered to the various categories of MPs. The population was made up of three different categories. These are consultants, senior doctors and junior doctors.

3.4.2 Secondary Sources

The secondary data was obtained extensively from the internet, articles, journals, magazines and books.

3.5 Research Instrument-Questionnaire

To get the relevant data, the measuring instrument used in the study was a self-administered questionnaire (appendix A) which was given to participants. The structure of the questionnaire consisted of open and closed ended questions in addition to collecting basic demographic information. The open ended questions demanded brief answers. This type of question was adopted to allow respondents to give their various views on questions asked. The open ended question was asked because it allows a follow up question, for example, "Is it possible to adapt and apply Evidence Based Medicine in healthcare facilities in Ghana? Give reasons".

However, such type of questions has a disadvantage of providing too many different answers which may be difficult to analyze. The close ended questions on the other hand provided possible answers to enable the respondents respond to a question. The respondents were required to tick the one most applicable to their situation. All respondents were assured of complete confidentiality.

3.6 Administration of the Research Instrument

The questionnaire was self-administered mainly because the respondents were literate. Secondly it was to allow respondents to answer questions at their own pace. The questions were

objective and direct to the point of study. It was presented to respondents neatly typed for easy reading. The language used was English. In all, one hundred questionnaires were administered.

3.7 Data Presentation and Analysis

Data analysis involves a number of closely related operations which are performed with the purpose of summarizing the collected data and organizing them in such a manner that answer the research questions of a study. The Statistical Package of the Social Scientists (SPSS Version 16.0) was used for the analysis of the data obtained. The decision to use this package was influenced by the fact that it is widely used, easy to use, presents excellent data format that require no debugging, and has a good documentation associated with the package. Descriptive statistics was used to provide frequencies, percentages, means and standard deviations of the variables. These were presented using tables and figures.

Finally, the Pearson Correlation and ANOVA were used to determine the relationship between the dependent variable (application of EBP) and independent variables (knowledge and attitude towards EBP in diagnosis and treatment of patients) at significant levels $**p=0.01$ and $*p=0.05$ (*). This enabled the researcher to make inferences and draw conclusion followed by recommendations based on the findings from the analysis.

CHAPTER FOUR

4 DATA ANALYSIS AND DISCUSSION OF FINDINGS

This chapter looks at the data analysis, results presentation and the discussion of findings. Data analysis is done in relation to the objectives of the study, results presented in tables showing frequencies and percentages and the discussion of findings are related to the literature reviewed and the process of Evidence Based Practice (EBP) Theory, the theoretical framework for the study. Data was collected using purposive and convenience sampling techniques with questionnaire as the main research instrument.

4.1 Response Rate

Out of the one hundred (100) questionnaires administered, eighty (80) questionnaires were retrieved giving a response rate of 80%. According to Armstrong and Ashworth (2000), the response rate of 60% and above are necessary to ensure that replies of those responding give an accurate picture of the population from which they are drawn. Babbie (2004) also agreed that a questionnaire response rate of 50% is adequate for analysis while response rate of 70% is very good. The response rate of 80% in this study is good enough for the applicability of the research findings. Fraenkel and Wallen (2000) were of the view that, after instruments have been administered and data have been scored and tabulated, the first step in data analysis is to describe it in a summary fashion using one or more descriptive statistics.

This chapter presents the analysis of the data and the results of the study. The results are presented in the form of tables using frequencies, percentages and figures. The results have been grouped under four thematic areas. These are as follows:

- Personal data of respondents
- Attitude toward EBP

- Knowledge of EBP
- Application of EBP

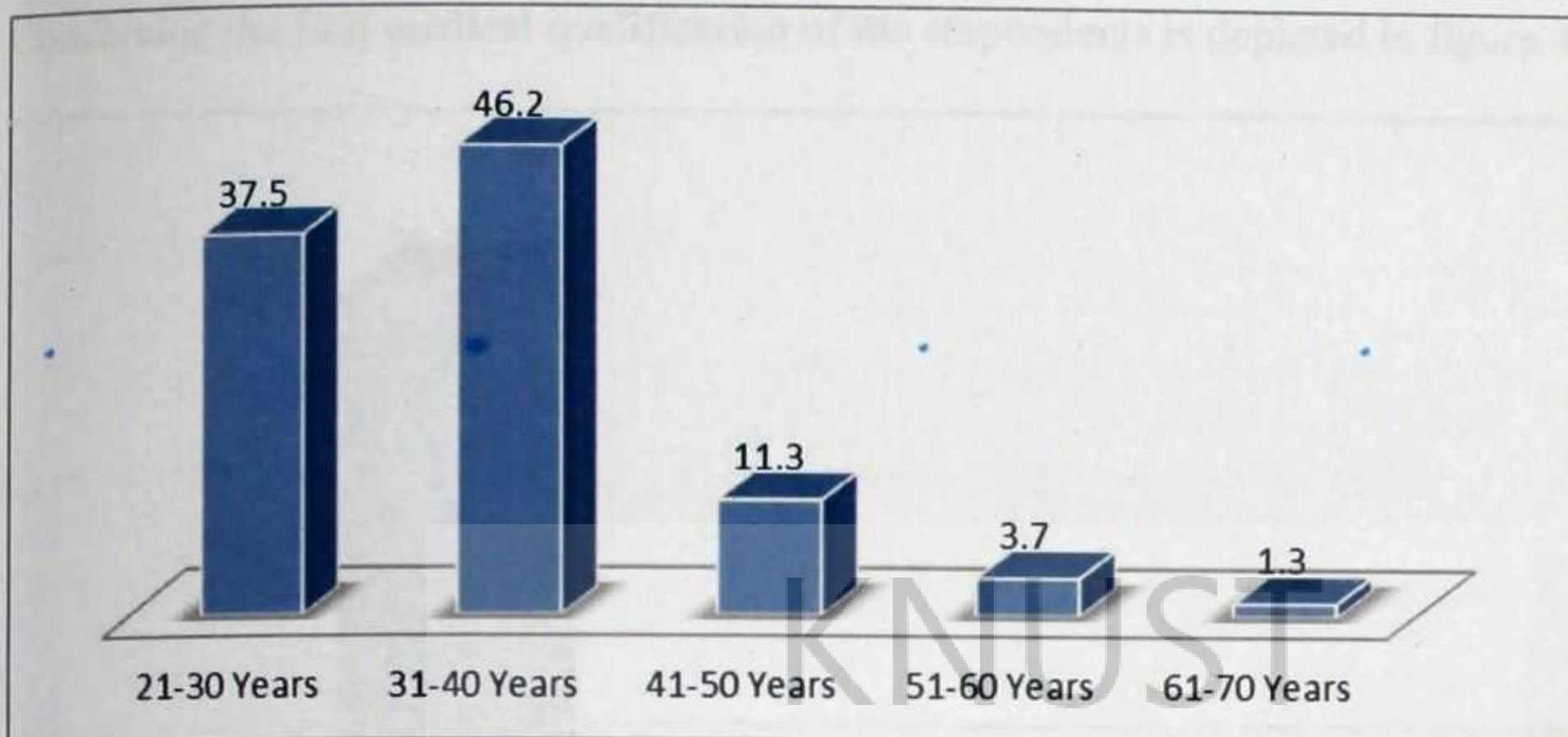
4.2 Demographic Information of the Respondents

The focus of the data collection exercise of the research was the general response of medical practitioners in the public sector concerning the current level of adaption and application of evidence based practice (EBP) for diagnosis and treatment. As part of the data collection of the study, the researcher attempted to identify the demographic characteristics of the respondents. The researcher asked respondents to provide responses to indicate their age, sex, marital status, educational levels such as first medical qualification, further qualification, place of study, status in the institution and area of practice. As already mentioned, out of the one hundred (100) eighty (80) medical practitioners drawn from Korle-Bu and Komfo Anokye Teaching Hospitals responded to the survey giving a response rate of 80%.

4.2.1 Age of Respondents

It was found that from the survey conducted in the two hospitals, 57.3% of the respondents were males followed by 28.7% who were females. The researcher sought to find the ages of the respondents due to the general perception of individuals adaption and application of evidence based practice because they are young. However, some scholars such as Tenopir et al (2003) and Wangwe (2007) are of the view that the relationship between age and adoption is still controversial because there are other factors that influence an individual's adoption to new innovations. This was controversy was confirmed as there were no clear indications of age having any significant effect on the MPs ability to adapt and apply EBM.

The findings are presented in Figure 4.1 below.



Source: Field work, 2013

Figure 4-1: Ages of Respondents

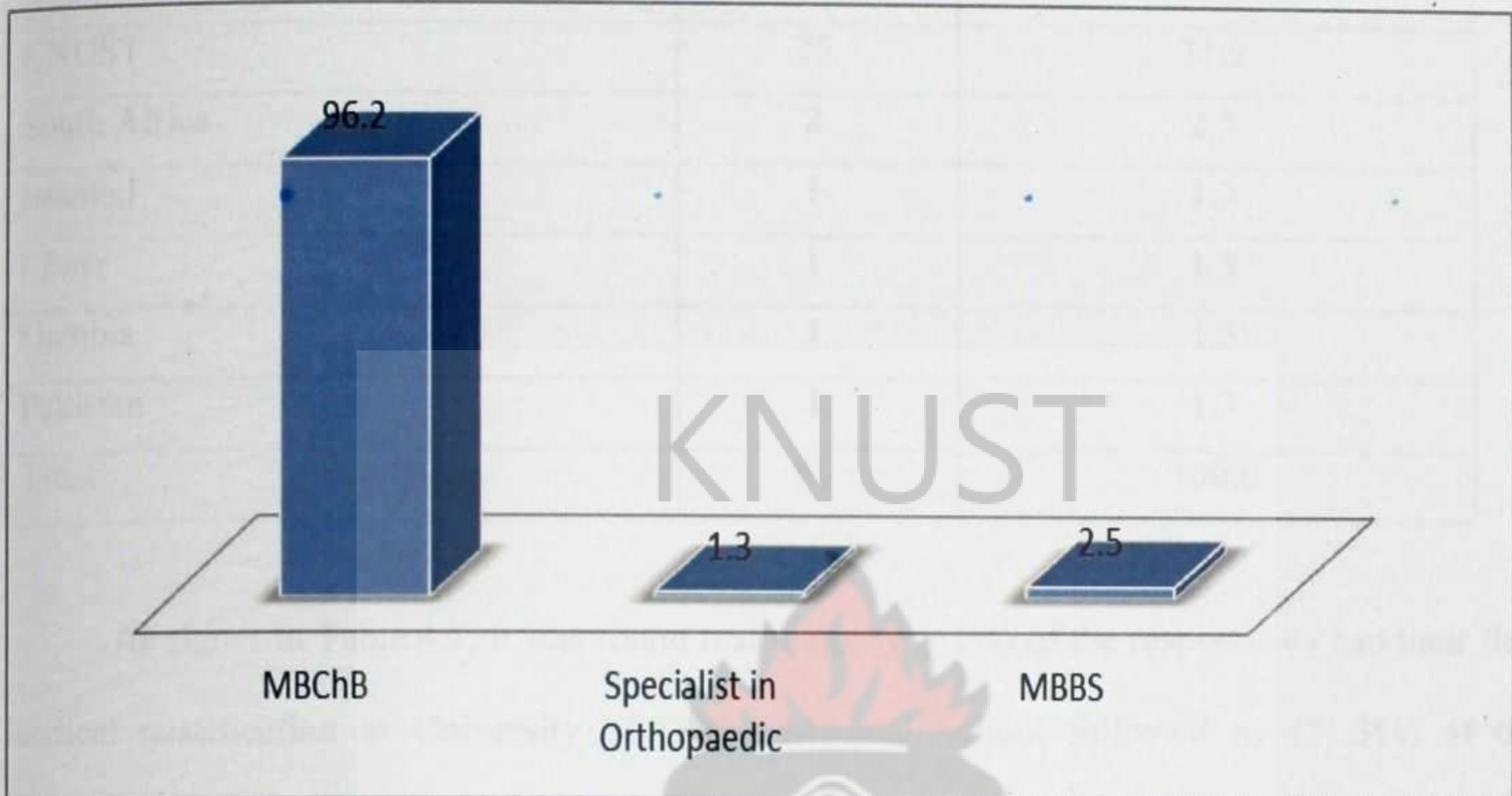
Figure 4.1 shows the age distribution of medical practitioners in the public sector in diagnosis and treatment. For the medical practitioners, (46.2%) were between the ages of 31-40 years, 37.5% fall between the ages of 21-30 years, 11.3% fall between the ages of 41-50 years, 3.7% were between the ages of 51-60 years whilst 1.3% fall between the ages of 61-70 years.

4.2.2 Marital Status

With marital status among the medical practitioners, it was found that, majority 53.7% of the respondents' survey were married, 43.7% were single, and 1.3% of respondents were widowed whilst another 1.3% out of the total population sampled for the study indicated that they were divorced. This data did not have any significant effect on EBM adaption and application by the practitioners.

4.2.3 Educational level

Concerning the first medical qualification of the respondents is depicted in figure 4.2 below.



Source: Field work, 2013

Figure 4-2: First Medical Qualifications

From the Figure 4.2, it was revealed that majority (96.2%) of the respondents sampled were having MBChB followed by MBBS with 2.5% of the survey total and 1.3% of the respondents were having Specialist in orthopaedic first degree. Level of education affects the ability of a medical practitioner to use EBM as knowledge has strong correlation with ability to apply. The higher the level the more confident a practitioner will be to use EBM.

4.2.4 Place of Study

As the first qualifications of the medical practitioners were known, the researcher further wanted to know the place of study. Table 4.1 below depicts the responses received concerning the place of study.

Table 4-1: Place of Study

Place of Study	Frequency	Percent
UGMS	49	61.0
KNUST	25	31.3
South Africa	2	2.5
Istanbul	1	1.3
China	1	1.3
Gambia	1	1.3
Pakistan	1	1.3
Total	80	100.0

As shows in Table 4.1, it was found that majority (61%) of the respondents had their first medical qualification at University of Ghana Medical School followed by (31.3%) of the respondents who had their medical education at Kwame Nkrumah University of Science and Technology, Kumasi. The rest had theirs at South Africa, Istanbul, China, Gambia and Pakistan respectively. This data did have much significance in the adaption and application of EBM among practitioners.

4.2.5 Any further Studies

As medical field demand frequent research, the researcher wanted to find out if respondents have any further studies apart from their first qualification. Responses received when respondents were asked whether they have any further studies, it was found that 35 representing 43.7% of the respondents had further studies whilst 45 constituting (56.3%) did not do any further studies as at the time of research.

4.2.5.1 Further Studies and Place

As a followed up question, respondents who have indicated that they have done further studies were asked to state the qualification and place of study. Table 4.2 below depicts the responses.

Table 4-2: Further Studies Qualification

Qualification	Frequency	Percent
Fellowship West African College of Physicians	7	20.0
Specialist in Hand	3	8.5
MWACS/MGCPS	2	5.7
Part 1 GCS	1	2.8
Residency EM Physician	1	2.8
MWACP	6	17.1
FWACS	6	17.1
Fellowship in Obs&Gynae	1	2.8
MMS	1	2.8
Master of Public Health (MPhil)	1	2.8
MAC'S	1	2.8
MGCS	4	11.4
PG Diploma	1	2.8
Total	35	100.0

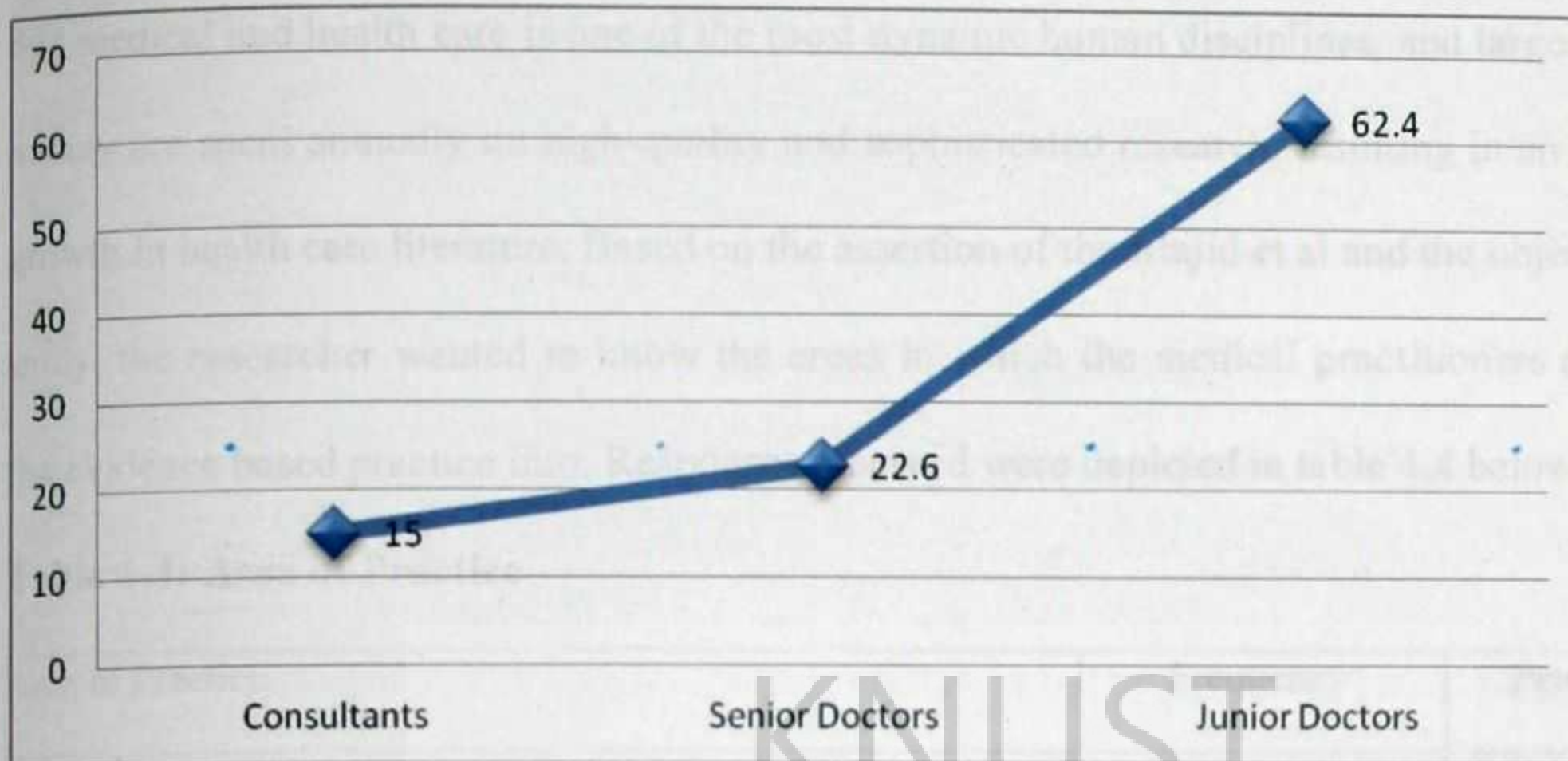
Table 4.2 shows further study of the respondents. Out of 35 respondents who had further studies were shows the breakdown of the individual studies in Table 4.2 above. The findings shows that out 80 respondents sampled only 35 respondents were able to do further studies as at the time of

the research. As stated earlier the higher the level of education the more confident a practitioner is to adapt and apply EBM.

Table 4-3: Place of Further Studies

Place of study	Frequency	Percent
UGMS – Ghana	17	21.3
KNUST-Ghana	12	15.0
Turkey	1	1.3
Taiwan	1	1.3
UG School of Public Health-Ghana	1	1.3
Ghana College of Physician and Surgeon-Ghana	1	1.3
London	1	1.3
South Africa	1	1.3
Total	35	100.0

From table 4.3, most of the respondents have their further study in Ghana as others have had their outside Ghana such as Turkey, Taiwan, London, and South Africa. The place of study did not have much significance on EBM adaption and application.



Source: Field work, 2013

Figure 4-3: Statuses in the Institution

With the status in the institutions under study, it was found that 62.4% of the medical practitioners were Junior Doctors, 22.6% were Senior Doctors, and 15% were Consultants. From the findings it can be deduced that majority of the respondents were Junior Doctors in the two hospitals. With the majority of the respondents being junior doctors, it explains the response that though majority are aware of the existence of EBM, most are reluctant to use it in daily practice. This can be controversial though and more research has to be conducted before further analysis can be made.

4.2.6 Area of Practice

Area of practice was sought to find out exactly where respondents were practicing in line with the adopting innovative interventions that are based on best practices as well as solid research-based evidence. Evidence-Based Practice (EBP) is one such technique and is quickly gaining popularity due to its potential to effectively handle clinical issues and provide better patient care. To this, Majid, Foo, Luyt, Zhang, Yin-Leng, Yun-Ke and Mokhtar (2011) posits

that medical and health care is one of the most dynamic human disciplines, and large amounts of money are spent annually on high-quality and sophisticated research, resulting in an exponential growth in health care literature. Based on the assertion of the Majid et al and the objectives of the study, the researcher wanted to know the areas in which the medical practitioners are adapting the evidence based practice into. Responses received were depicted in table 4.4 below:

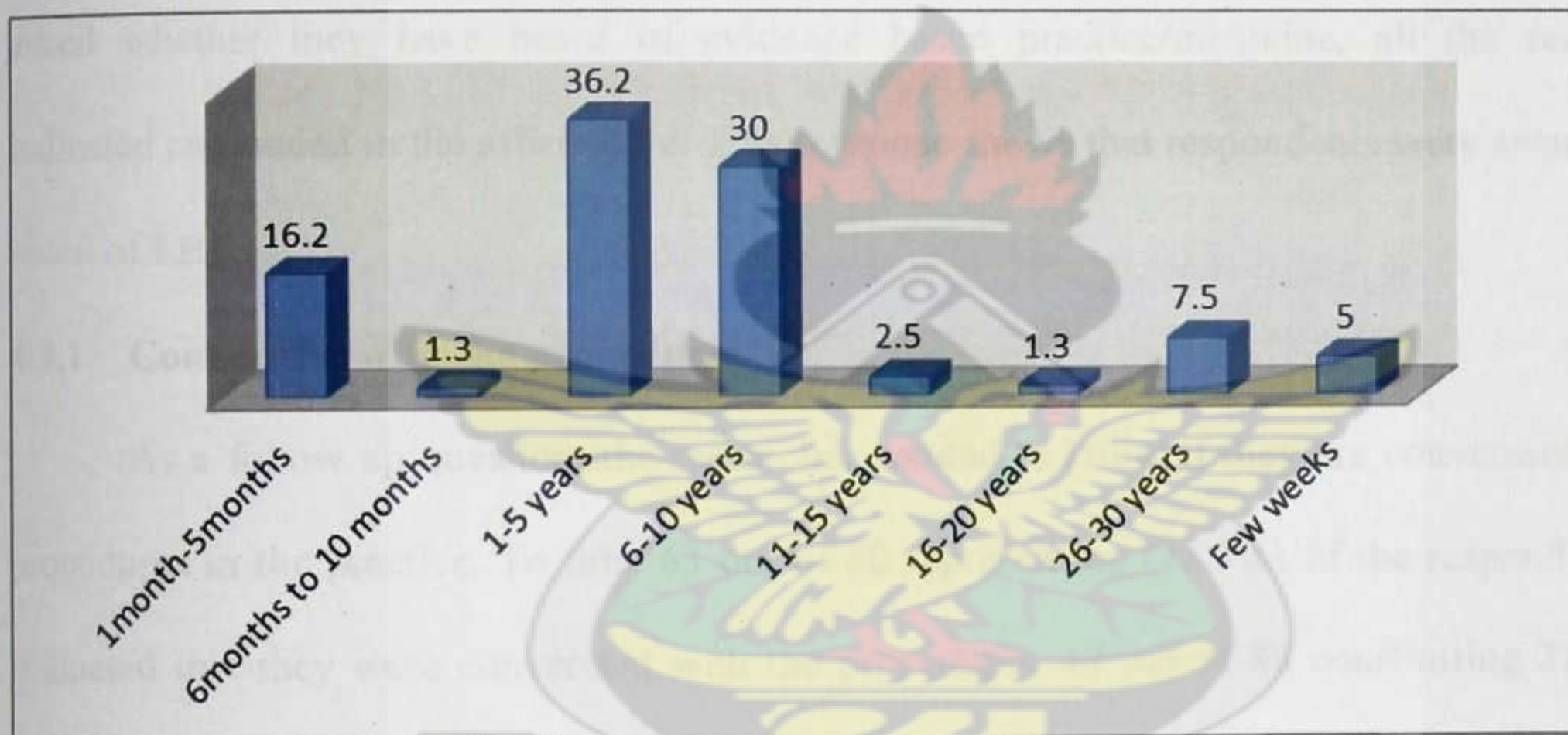
Table 4-4: Area of Practice

Area of Practice	Frequency	Percentage
Paediatrician	15	18.6
Internal medicine	8	10
Surgery	16	20.0
Obst/Gynaecology	10	12.4
Child Health	7	8.7
Accident and Emergency dept	2	2.5
Hand surgery (Trauma)	2	2.5
Urology	2	2.5
Medicine	1	1.3
Housemanship	5	6.3
Trauma/Orthopaedic	1	1.3
Family medicine	2	2.5
Emergency medicine	5	6.3
General Surgery	2	2.5
Occupational Health	1	1.3
Nephrology	1	1.3
Total	80	100.0

Table 4.4 depicts the areas of practice of the respondents. It was revealed that most of the respondents 20% were practicing surgery, 18.6% were paediatricians, 12.4% were practicing Obst/gynaecology, and 10% were practicing internal medicine and child health (See table 4.4).

4.2.7 Period of Practice

Here, the researcher wanted to know how long respondents were in practice to find out the current level of adaption and application of evidence based practice among medical practitioners in the public sector in diagnosis and treatment.



Source: Field work, 2013

Figure 4-4: Period of practice

Figure 4.4 shows results on the period of practice of medical practitioners. The results show that most of the respondents were in practice for 1-5 years now. The rest were in the practice for 6-10 years, 26-30 years. However, the third highest number 16.2% of the respondents were in the practice for 1 month to 5months. The newest practitioners were in practice for few weeks.

4.3 Awareness of Evidence Based Practice/Medicine

According to Kania-Lachance, Best, McDonah, Ghosh (2006), historically, care of the patient was influenced by the experiences and opinions of those involved in providing treatment. EBP marks a shift among health care professionals from a traditional emphasis on authoritative opinions to an emphasis on data extracted from prior research and studies (Jette, Bacon, Batty, Carlson, Ferland, Hemingway, Hill, Ogilvie and Volk, 2003). A meta-analysis done by Heater et al. demonstrated that medical practitioners in public sector practicing evidence based improves patient care, as compared to traditional practices (Mantzoukas, 2007). When respondents were asked whether they have heard of evidence based practice/medicine, all the respondents indicated responded in the affirmative. This response shows that respondents were aware or have heard of EBP.

4.3.1 Conversant with the procedures

As a follow up question, the researcher wanted to know if they are conversant with the procedures in the practice. To this, 63 out of 80 representing (78.7%) of the respondents have indicated that they were conversant with the procedures, 17 out of 80 constituting 21.3% said they were not conversant with the procedures of EBP.

4.3.2 Usage

Again, the researcher wanted to know whether respondents use the EBP in their everyday work. The processed data shows that 57 representing (71.3%) said they used it in their everyday work, 22 representing (27.4%) have no idea whilst 1.3% of the respondent said they sometimes use it in their work. For those who used EBP in their diagnosis and treatment further explained that using this procedure produce results as it is quite effective in treating patients. But for those

who do not use it also explained that there is no time to go through the procedures. Also, there are limited studies in subscription in Africa.

4.3.2.1 Usefulness of EBP

For those who answer 'yes' were asked whether they find EBP useful. Out of 57 respondents who use it for their diagnosis and treatment in their everyday work, 37 representing 64.9% of the respondents indicated that EBP is very useful whereas 20 constituting 35.1% of the respondents said no. From the majority point of view, the researcher can deduce that EBP is useful in diagnosis and treatment of patients.

Table 4-5: Getting acquainted with EBP

Getting acquainted with EBP	Frequency	Percentage
In medical school	51	63.7
On the job	13	16.2
Through friends	6	7.5
Through the Internet	1	8.8
Discovery in the library	1	1.3
Conference of surgeons	2	2.5
Total	80	100.0

With respect to where respondents get acquainted with EBP, Table 4.5 shows Medical School appear to be the place where majority (63.7%) get acquainted with EBP. This is followed by on the job representing (16.2%) and Internet (8.8%), through friends (7.5%). As revealed by the findings, the researcher can conclude that majority of the respondents were acquainted with EBP in school.

4.3.3 Possibility of adapting Evidence Based Medicine

As “evidence-based practice” has become a buzz word in the last few years, there is still no consensus on what exactly constitutes an evidence-based practice. Respondents were asked if it is possible to adapt and apply Evidence Based Medicine in healthcare facilities in Ghana. Responses received shows that majority (86.3%) of the respondents indicated that it is possible to adapt and apply EBP medicine in healthcare facilities in Ghana. Majority further explained that EBP is universal as access to literature is made very easy now. The remaining respondents 11 out of 80 constituting (13.7%) of the responses indicated ‘no’ by stating that there is no dedicated facilities for EBP adaptation in healthcare in Ghana because there is the need for awareness creation for the doctors to become conversant.

4.3.4 Attitude towards EBP

The second objective of this was to find out the attitude of medical practitioners towards the use of evidence based practice in their diagnosis and treatment of patients. To investigate this, a set of 5 statements were used to investigate the attitudes of public sector medical practitioners toward integrating EBP into their patient care. It was found that 42.5% of the medical practitioners “disagreed” with the statement that they workload were too great for them to keep up to date with all the new evidence (Table 4.6). Another 22.5% of the medical practitioners agreed with the statement that they workload is too great for them to keep up to date with all the new evidence based to practice methods. It appeared that the public sector medical practitioners were open to adopt new health care approaches and not overly dedicated to traditional techniques.

Table 4-6: Attitude towards EBP

Attitude towards EBP	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree
My workload is too great for me to keep up to date with all the new evidence	3(3.7%)	18(22.5%)	16(20%)	34(42.5%)	9(11.3%)
I resent having my clinical practice questioned	3(3.7%)	4(5%)	4(5%)	40(50%)	29(36.3%)
Evidence-based practice is a waste of time	1(1.3%)	-	5(6.2%)	25(31.2%)	49(61.3%)
I stick to tried and trusted methods rather than changing to anything new	1(1.3%)	5(6.2%)	14(17.5%)	45(56.3%)	15(18.7%)

Similarly, 50% of the medical practitioners also disagreed that they resent having clinical practice questioned, 36.3% strongly disagreed with the statement that they resent having questioned their clinical practice not relevant to their daily diagnosis and treatment of their patients. Furthermore, more 61.3% of doctors strongly disagreed that evidence-based practice is a waste of time. With statement “I stick to tried and trusted methods rather than changing to anything new” 56.3% of the respondents disagreed that, due to heavy workload, they cannot keep up to date with all new evidence. On the whole, it appeared that a clear majority of the doctors had a positive attitude toward new techniques of diagnosis and treatment has provided a platform to learn and adopt such techniques, including EBP.

4.3.5 Knowledge of EBP

The third objective of the study is to investigate the knowledge of EBP among the public sector doctors in Ghana. To do these doctors were asked about their Knowledge of EBP

adaptation in diagnosis and treatment of their patients. A set of four (very high, high, average and low) statements were used to capture their responses. It was noted that 56.3% of the respondents express their opinion on research skills as average, 43.7% expressed their knowledge of EBP in relation to information technology skills as average, 48.7% also expressed their knowledge of EBP on monitoring and reviewing of practice skills as average, 42.5% also expressed their knowledge of EBP on converting information needs into a research question as average whilst 50% of the respondents knowledge of awareness of major information types and sources to evidence based practice as average to these statements. Probably, this finding may either be that respondents were not practicing EBP or had only limited knowledge of this practice. However, knowledge of how to retrieve evidence, ability to analyse critically evidence against set standards, ability to determine how valid (close to the truth) the materials is, ability to determine how useful clinically applicable the materials are, ability to apply information to individual cases, sharing of ideas and information with colleagues and ability to review one's own practice were high among the respondents as depicted in Table 4.7.

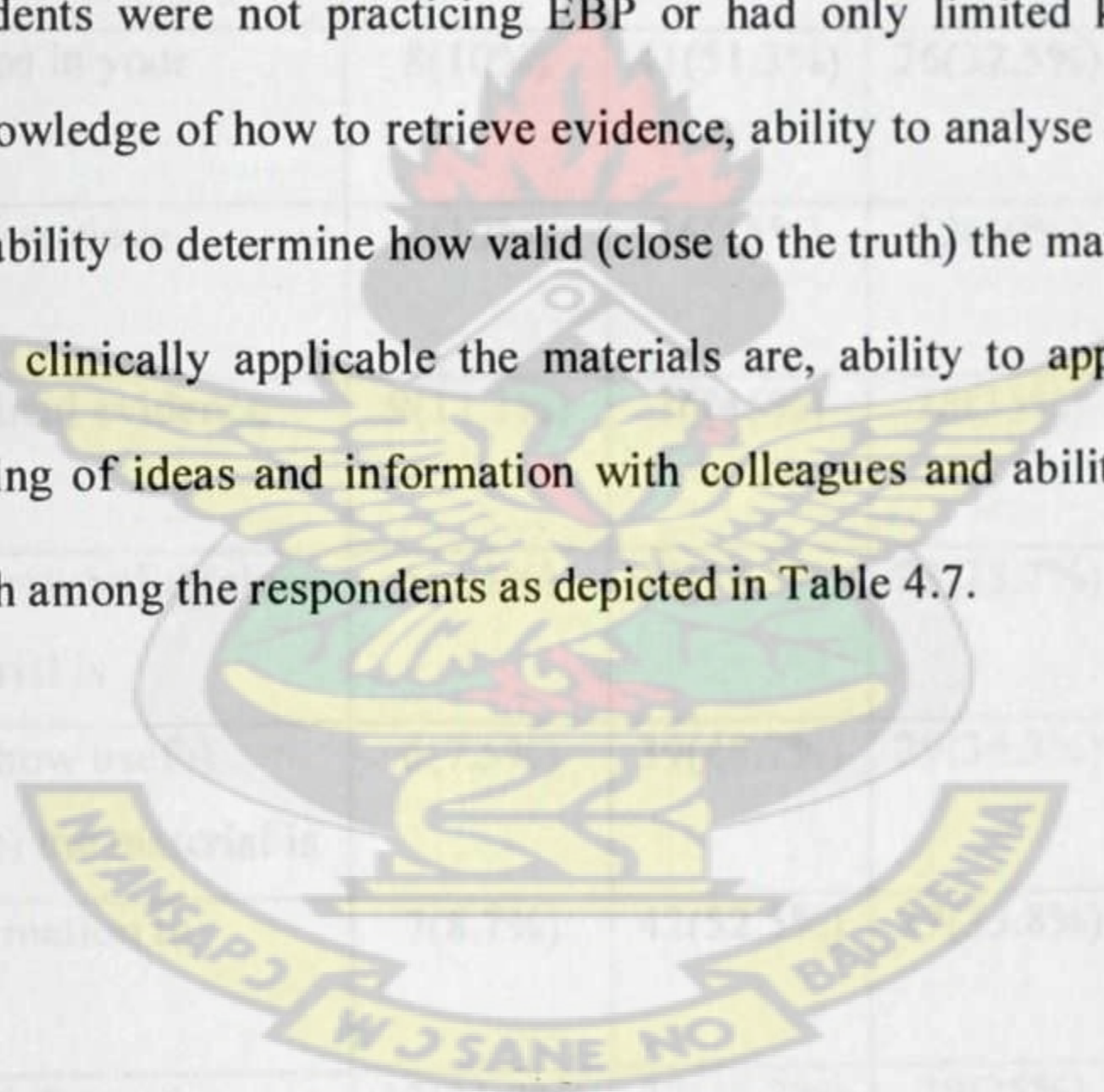


Table 4-7: Knowledge of EBP

Knowledge	Very High	High	Average	Low
Research skills	7(8.7%)	18(22.5%)	45(56.3%)	10(12.5%)
Information technology skills	10(12.5%)	29(36.3%)	35(43.7%)	6(7.5%)
Monitoring and reviewing of practice skills	9(11.3%)	23(28.7%)	39(48.7%)	9(11.3%)
Converting your information needs into a research question	6(7.5%)	20(25%)	34(42.5%)	20(25%)
Awareness of major information types and sources	9(11.3%)	26(32.5%)	40(50%)	5(6.2%)
Ability to identify gaps in your professional practice	8(10%)	41(51.3%)	26(32.5%)	5(6.2%)
Knowledge of how to retrieve evidence	8(10%)	36(45%)	32(40%)	4(5%)
Ability to analyse critical evidence against set standards	9(11.3%)	36(45%)	28(35%)	7(8.7%)
Ability to determine how valid (close to the truth) the material is	5(6.3%)	42(52.5%)	23(28.7%)	10(12.5%)
Ability to determine how useful (Clinically applicable) the material is	6(7.5%)	39(48.7%)	29(36.3%)	6(7.5%)
Ability to apply information to individual cases	7(8.7%)	42(52.5%)	27(33.8%)	4(5%)
Sharing of ideas and information with colleagues	17(21.2%)	37(46.3%)	20(25%)	6(7.5%)
Dissemination of new ideas about care to colleague	10(12.5)	43(53.8%)	20(25%)	7(8.7)
Ability to review your own practice	10(12.5%)	41(51.3%)	22(27.5%)	7(8.7%)

From the findings, it can be deduced that knowledge of EBP among the respondents is quite high as majority can apply information to individual cases for diagnosis and treatments.

4.3.6 Application of EBP

The fourth objective of the study was to investigate the application of EBP into diagnosis and treatment of patients. Gathering the responses, a set of 4 statements were used to investigate the application of EBP into diagnosis and treatments. As revealed in Table 4.8, it was found that majority 57.5% do not often apply EBP into their diagnosis and treatment when it comes to formulation of answerable questions in filling the gap of traditional methods.

Table 4-8: Application of EBP

Application of EBP	Very often	Often	Not often	Not at all
How often have you formulated a clearly answerable question as the beginning of the process towards filling this gap?	2(2.5%)	13(16.3%)	46(57.5%)	19(23.7%)
How often have you tracked down the relevant evidence once you have formulated the question?	6 (7.5%)	12(15%)	51(63.8%)	11(13.7%)
How often have you critically appraised, against set criteria, any literature you have discovered?	5(6.3%)	28(35%)	31(38.7%)	16(20%)
How often have you integrated the evidence you have found with your expertise?	4(5%)	50 (62.5%)	17(21.2%)	9(11.3%)
How often have you integrated the evidence you have found with your expertise?	5(6.3%)	17(21.2%)	49(61.2%)	9(11.3%)
How often have you evaluated the outcomes of your practice?	4 (5%)	37(46.3%)	28(35%)	11(13.7)
How often have you shared this information with colleagues?	6(7.5%)	33(41.3%)	33(41.3%)	8(10%)

On how often respondents tracked down relevant evidence as they have formulated questions for their diagnosis and treatment revealed that majority 63.8% of the respondents indicated that they apply EBP into diagnosis and treatment but not often. Concerning how often respondents critically appraised the literature discovered against the set criteria shows that (35%) of respondents often apply the literature discovered into their diagnosis and treatment but 38.7% of respondents not often apply the literature discovered into their everyday work. However, when respondents were asked how often they integrate evidence found with your expertise shows that majority (62.5%) of respondents often apply the evidence found into their diagnosis and treatment.

On how often respondents evaluate their outcomes of their practices shows that (46.3%) often evaluate the outcome of their practice whilst (35%) not often evaluate their practices. Another 41.3% of the respondents agreed to the statement that they often share information with colleagues whilst 41.3% agreed to statement that they do not often share information with colleagues. From the findings, it appears that the respondents were open to the application of EBP into their health care approaches and not overly dedicated to traditional techniques.

4.4 Major Problems Associated with the Application of EBP into Diagnosis and Treatment

This section of the questionnaire intended to investigate the problems associated with the application of EBP into diagnosis and treatment of patients in the public hospitals in Ghana.

When respondents were asked to state the major problems facing the adaptation and application of EBP in patient care in Ghana, the following responses were given by the respondents:

- Accesses to information sources such as full articles were not available.
- Lack of funds to support research

- Lack of research training
- Inadequate research on adaptive information
- Inadequate facilities
- Lack of research materials i.e. internet access and textbooks
- Some practitioners resort to old evidence and practice
- Resources are not readily available in application
- Challenge of what a patient believes vis-a-vis what the patient chose as form of therapy e.g. herbal, spiritual orthodox
- Lack of knowledge about EBP and what it entails
- Lack of awareness of EBP practices
- Failure to impress upon medical school students to adapt EBP techniques.

These findings vividly agreed with authors such as Majid, Foo, Luyt, Zhang, Yin-Leng, Yun-Ke and Mokhtar (2011) who have identified other barriers to the acceptance, adoption, and implementation of EBP. According to DiCenso and Cullum (1998), implementation of EBP places additional demands on medical practitioners to apply credible evidence to individual client situations through searching related evidence, using clinical judgments, and considering client values and system resources.

4.5 Way Forward

Finally, respondents were asked to suggest measures to improve the application of EBP in diagnosis and treatment of patients in the public hospitals in Ghana. The summary of the responses are indicated below:

- There is the need to improve access to the internet and information sources in the public hospitals in Ghana for easy access to information sources.

- Policy formulation, funding and enforcement were not in place must be put in place
- There is the need for all the public hospitals to join clubs with foreign hospitals to share evidence based researches among the medical practitioners in the country.
- Resources and information sources must be widespread and decentralised so that practitioners in remote areas can access these, especially in the form of hardcopy documents.
- There is the need for education on EBP usage among medical practitioners.
- Improve awareness among medical professionals-starting from medical school.

A cursory look at the views suggested by the respondents' shows that there is the need for intensive awareness campaign concerning EBP adaptation for diagnosis and treatment of patients.

4.6 Interview Findings from Institutions

Interviews using an interview guide (appendix B) with Ministry of Health (MOH), Ghana Health Service (GHS), Ghana Medical Association (GMA), Legon Medical School and KNUST Medical School showed that the main health institution which is MOH had no general policy on EBP and its implementation. The ministry had specific hard copy treatment guidelines on certain diseases, for example, malaria control, tuberculosis and diarrhoea. GHS implements the ministry's policies since there was none specific to EBP, GHS cannot implement. Generally the above mentioned institutions are aware of the existence of EBP though there is no formal effort to adopt and implement it in the health sector. The educational institutions have courses that brush the subject of EBP but nothing concrete.

General information gathered from these interviews support the views gathered from the questionnaires. According Dr. Cynthia Bannerman Deputy Director of institutional care division

of MOH, the ministry has challenges with the implementation of the health guidelines as some practitioners prefer to still use their clinical experiences and expertise to treat their patients rather than use the guidelines. This situation was one noted among some of the respondents to the questionnaires.

4.7 Relationship between Knowledge, Attitudes, and Applicability of EBP

An inference analysis between knowledge, attitudes, and applicability of EBP was done to determine whether a relationship exist between them. Linear regression analysis was used to examine the relationship between the independent variables (integrating evidence-based into practice, ability to apply, clinical base evidence and attitude towards EBP) and the dependent variable (Knowledge of how to apply EBP into practices). Two basic analyses, Pearson Correlation and ANOVA, were used to achieve this objective. Analyses of the relationships are presented indicating the significant levels.

First the researcher sought to establish whether a relationship exists between each independent variables (integrating evidence-based into practice, ability to apply, clinical base evidence and attitude towards EBP) and the dependent variable (Knowledge of how to apply EBP into practices). The Pearson correlation analysis was therefore used to achieve this purpose. Descriptive Statistics was performed first to find the Mean, Standard Deviation to determine dependent variable against independent variables (See Table 4.9).

Table 4-9: Descriptive Statistics

	Mean	Std. Deviation	N
Knowledge of how to...	2.40	.739	80
Integrating evidence-based into practice	2.39	.755	80
Ability to apply	2.35	.713	80
clinical base	4.51	.729	80
Attitude towards EPB	3.35	1.069	80

Source: Field Data, 2013

Analyses of the relationships are discussed with references to the first research question formulated. First of all, a list of the variables used in this study, their means, standard deviations and frequencies are shown in Table 4.10 below.

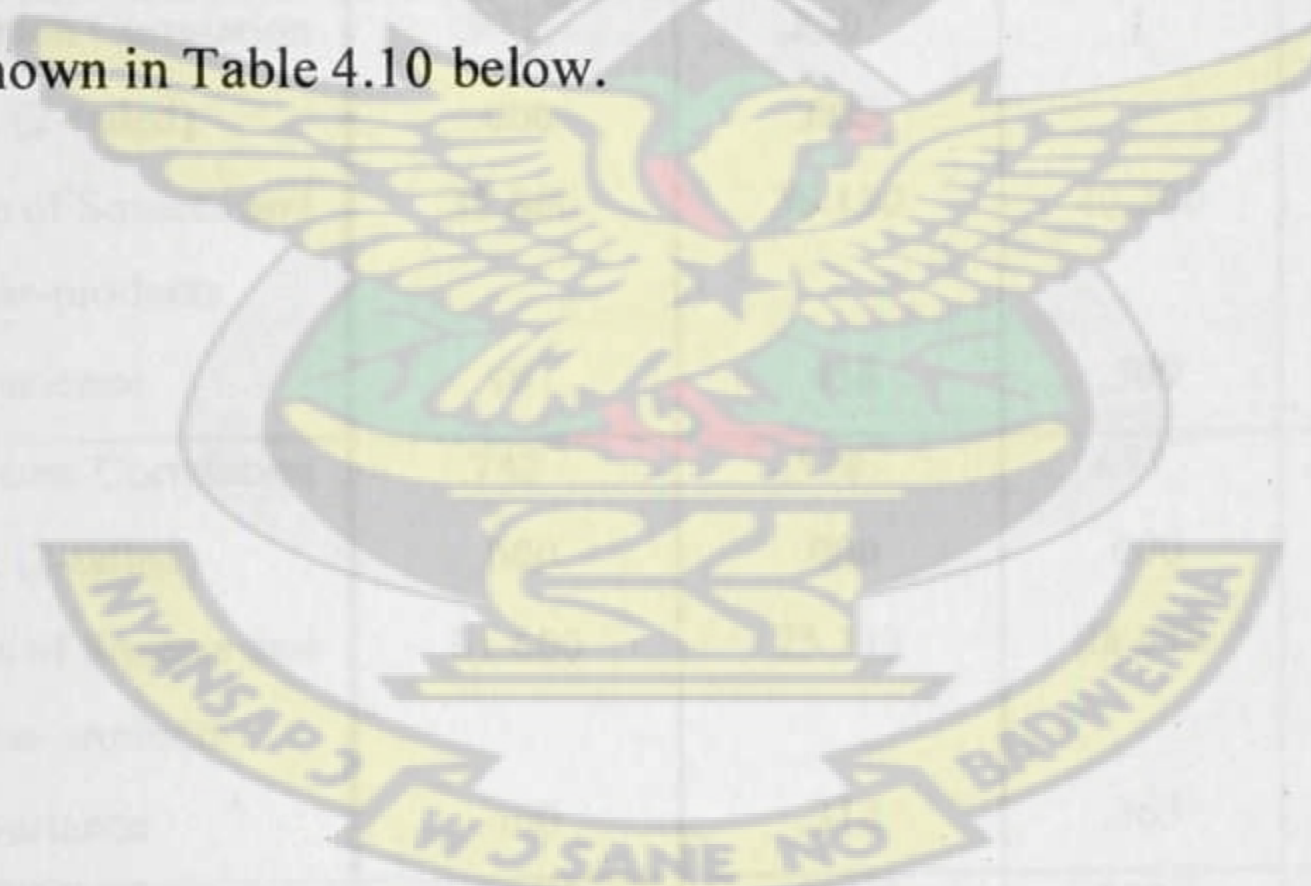


Table 4-10: Pearson Correlations between Knowledge, Application and Attitude towards EBP

		Knowledge of how to...	Integrating evidence-based into practice	Ability to apply	Clinical base	Attitude towards EPB
Knowledge of how to...	Pearson Correlation	1	.785**	.931**	.742**	.846**
	Sig. (2-tailed)		.000	.000	.000	.000
	Sum of Squares and Cross-products	43.200	34.600	38.800	31.600	52.800
	Covariance	.547	.438	.491	.400	.668
Integrating evidence-based into practice	Pearson Correlation	.785**	1	.850**	.578**	.772**
	Sig. (2-tailed)	.000		.000	.000	.000
	Sum of Squares and Cross-products	34.600	44.987	36.150	25.113	49.150
	Covariance	.438	.569	.458	.318	.622
Ability to apply	Pearson Correlation	.931**	.850**	1	.697**	.800**
	Sig. (2-tailed)	.000	.000		.000	.000
	Sum of Squares and Cross-products	38.800	36.150	40.200	28.650	48.200
	Covariance	.491	.458	.509	.363	.610
Clinical base	Pearson Correlation	.742**	.578**	.697**	1	.823**
	Sig. (2-tailed)	.000	.000	.000		.000
	Sum of Squares and Cross-products	31.600	25.113	28.650	41.988	50.650
	Covariance	.400	.318	.363	.531	.641
Attitude towards EPB	Pearson Correlation	.846**	.772**	.800**	.823**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	Sum of Squares and Cross-products	52.800	49.150	48.200	50.650	90.200
	Covariance	.668	.622	.610	.641	1.142

** . Correlation is significant at the 0.01 level (2-tailed).

a. List wise N=80

As indicated early on, first of all, the researcher tried to find out the relationship between the independent and dependent variables. Table 4.9 predicted that there is a relationship between knowledge of EBP, Integrating evidence-based into practice, Ability to apply, Clinical base and Attitude toward EBP have a positive and significant relationship with knowledge of EBP. The Pearson correlation analysis in Table 4.10 above supports this prediction. From the analysis, positive and significant correlations exist between knowledge, application and attitude. The highest correlation between knowledge and ability to apply was recorded with (.931**), followed by Attitude towards EPB on the dependent variable knowledge with (.846**), knowledge with integrating evidence-based into practice was recorded at (.785**) while knowledge and clinical base was recorded as (.742**). All these variables were measured with correlation at significant level of 0.01 (2-tailed).

With the ANOVA analysis, significant level was statically showing F value at 167.469 statistically significant at (.000^a) as presented in the Table 4.11 below.

Table 4-11: ANOVA Correlation between Knowledge, Application and Attitude

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	38.850	4	9.713	167.469	.000 ^a
	Residual	4.350	75	.058		
	Total	43.200	79			

a. Predictors: (Constant), Attitude towards EPB, Integrating evidence-based into practice, clinical base, Ability to apply

b. Dependent Variable: Knowledge of how to...

Table 4-12: Coefficients dependent and independent variables

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.024	.205		-.116	.908
Clinical base	.028	.069	.028	.413	.681
Ability to apply	.808	.083	.780	9.743	.000
Integrating evidence-based into practice	-.115	.074	-.117	-1.545	.127
Attitude towards EPB	.200	.059	.289	3.416	.001

a. Dependent Variable: Knowledge of how to...

Given the value of Beta of (.780) with $t = 9.743$, $p = .000 < 0.05$ there are strong indications that Knowledge of how to apply EBP into diagnosis and treatment significantly affects the Ability of the practitioner to apply EBP effectively and efficiently. The next variable that Knowledge of how to apply EBP significantly predict is Attitude towards EBP with a Beta of (.289) with $t = 3.416$, $p = .001 < 0.05$.

Integrating evidence-based into practice with a Beta of (-.117) with $t = -1.545$, $p = .127$ and Clinical base with a Beta of (.028) with a $t = .413$, $p = 0.681 > 0.05$ (.028) with a $t = .413$, $p = 0.681$ of which both have p-values greater than 0.05 implies that knowledge of EBP is not a significant predictor at those levels.

CHAPTER FIVE

5 DISCUSSION OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

This research was undertaken purposely to find out the current level of adaption and application of evidence based practice (medicine) among medical practitioners in the public sector in diagnosis and treatment. This chapter discusses the major findings of the study in line with the objectives of the study and also the conclusion which were based on the findings. Recommendations have been made in the light of the findings.

5.1 Discussion of Findings

The discussion was done on the following thematic areas:

- Awareness of EBP
- Attitude toward EBP
- Knowledge of EBP
- Application of EBP
- Relationship between Knowledge, Attitudes, and Applicability of EBP
- Problems with EBP usage among medical practitioners

5.1.1 Awareness of EBP

The majority of the medical practitioners working in public hospitals in Ghana especially the two hospitals investigated were aware and have a positive attitude toward EBP, which was consistent with some previous studies (Upton and Upton, 2006; Munroe, Duffy and Fisher, 2008). Medical practitioners who had longer experience in diagnosis and treatment were likely to be more confident in implementing EBP, supporting the finding of Ferguson and Day, who reported that new medical practitioners, due to limited practical knowledge and experience, felt less confident and willing to engage in EBP (Griffiths et al, 2001).

5.1.2 Attitude toward EBP

Findings from the study show that medical practitioners in the two public hospitals showed positive attitudes towards evidence-based practice to support clinical decision-making. It was seen as necessary as most of the respondents in Table 4.6 even disagreed with the statement “my workload is too great for me to keep up to date with all the new evidence or evidence-based practice is a waste of time” This finding was consistent with study conducted by Mel et al, (2013) ‘implementing evidence-based practice improved client care’. Aarons (2004) also contended that evidence-based practice attitude scale was developed to assist health care providers to use it for treatments and interventions in practice.

5.1.3 Knowledge of EBP

The finding that the respondents reported some understanding of technical terms used in literatures was corroborated by the report of McColl et al, (1998). The Knowledge of technical terms and confidence in skills needed to retrieve and critically appraise information was related to age and years since licensure. Age and education attainment were significantly associated to knowledge.

This further suggests that there might have been an increased emphasis on the knowledge (skills) needed to implement EBP in physiotherapy education programmes in recent years. This might have been responsible for the findings as most of the respondents in Table 4.7 above have demonstrated more confidence in knowledge and use of EBP to determine how useful (Clinically applicable) the material is to their everyday activities in the hospital. Dale (2006) said evidence-based practice means the practitioner should demonstrate skills in appraisal of evidence, self-evaluation and reflection and reflective practice, as well as personal growth, accountability, and lifelong learning.

5.1.4 Application of EBP

Findings in Table 4.8 revealed that majority of the respondents expressed that although they have knowledge about the EBP literature they do not often apply it to their everyday activities. To this finding, Gibbs & Gambrill (2002); Thyer & Myers (2011); and Webb (2002) contended that the confusion of EBP with practice evaluation and notions of 'what works' has also derailed understanding of EBP as a clinical decision-making process. As a decision-making approach, the ambit of EBP is assessment, diagnosis, prognosis, and intervention, and it has never been limited only to effectiveness questions (Sackett, Straus, Richardson, Rosenberg, & Hanes, 1997).

Given EBP is a model designed to increase practitioner uptake of research evidence, past research on social workers' use of research conveys a pessimistic outlook for EBP implementation and repeatedly shows that 'practitioners are more likely to use pragmatic indicators than empirically-based approaches' (Shlonsky (2009) though Mullen (2004) believes such claims have yet to be tested empirically. A central question in this respect is whether the use of indicators as heuristic devices actually constitute EBP or whether we are instead dealing with something more accurately described as 'information-based practice' (Gray, Plath, & Webb, 2009).

5.1.5 Relationship between Knowledge, Attitudes, and Applicability of EBP

The findings of inference analysis between knowledge, attitudes, and applicability of EBP using the Pearson Correlation and ANOVA analysis in table 4.10 and 4.12 both showed positive significant relationship between the factors. The level of knowledge on how to apply EBP and attitudes of the practitioners both affect their ability to effectively and efficiently apply EBP in the treatment and diagnosis of their patients. Thus the more knowledgeable a practitioner

the better he is at using this tool to benefit of his patients. The more positive a medical practitioner's attitude towards EBP the more inclined he is to acquire more knowledge in order to enhance the ability to apply appropriately.

5.1.6 Problems with EBP usage among medical practitioners

This study also explored the factors that were likely to discourage medical practitioners in adopting EBP. Inadequate facilities, access to information sources such as full articles were not available and lack of funds to support research and other factors as shown in section 4.4.12 above appeared to be the most important factor for medical practitioners in the public hospitals in Ghana to face in implementing EBP methods in their diagnosis and treatment of patients. As EBP is a multistep process, medical practitioners need sufficient time to identify clinical issues where EBP can be implemented, translate these issues into well-formulated clinical questions, locate the best available evidence through literature searching, conduct a critical appraisal of the retrieved evidence, formulate and apply an intervention, and assess the effectiveness of the applied intervention.

Several previous studies also highlighted lack of time as a major barrier to adopting EBP (Griffiths et al, (2001); O'Connor and Pettigrew (2009); McInerney & Suleman (2010) and Solomons & Spross (2010). Hospital management needs to make necessary adjustments in the work schedule of nurses to ensure sufficient time for them to learn and implement EBP. Two other barriers to adopting EBP that this study identified were lack of awareness and inadequate understanding of statistical terms and the technical jargon used in research articles. This finding was consistent with studies conducted by Griffiths et al, (2001) and O'Connor and Pettigrew (2009). Unfamiliarity with statistical and research terminology could be a serious barrier for some

practitioners especially the traditional ones. A well-designed training programme is likely to overcome these problems to some extent.

An obvious deficiency of many previous studies on this topic was inadequate coverage given to information-related competencies. As medical and health care literature is growing exponentially, all health care professionals need to possess good searching skills to quickly retrieve current, relevant, and accurate information. Inadequate search skills can result in missing crucial information or retrieving too much information that could cause information overload and anxiety. Dale (2006) suggested that "evidence-based practice is a complex concept, which is assumed to be compatible with medicine" and that, although it is now more accepted within medical field, it continues to be dominated by the medical profession. Yet to deliver a comprehensive healthcare service, all members of the multidisciplinary team are required to be committed to an evidence-based approach.

5.2 Conclusion

Like many other disciplines, the health care sector is experiencing major changes due to extensive research and development activities. As doctors play a crucial role in the delivery of health care, they need to embrace new and innovative techniques to provide effective and best possible treatment to their patients. Like many previous studies, this study also discovered a positive attitude among doctors toward EBP. However, at the same time, it was found that several institutional and personal barriers were hindering the adopting of EBP. Hospital management can easily overcome some of these barriers through arranging EBP training and providing time off from work for medical practitioners to learn and implement new techniques.

Another important finding of this study was that medical practitioners preferred to consult each other or colleagues to obtain needed information. Hospital management can create

conducive environment and provide socializing opportunities for medical practitioners to promote peer-to-peer information and knowledge sharing. Similarly, as EBP is an information-intensive activity, library and information professionals working in hospitals can play a significant role in developing basic information literacy skills, particularly literature searching skills, among medical practitioners.

Furthermore, although medical practitioners at the two hospitals investigated showed a positive attitude toward EBP, Korle-Bu and Komfo Anokye teaching hospital management should develop a comprehensive strategy for building EBP if possible for all the public hospitals in the country through proper funding for the implementation of EBP in the hospitals.

5.3 Recommendations

Based on the findings of the study, the following recommendations were made for improvement on the awareness, accessing and adoption of EBP resources to enhance information provision to medical practitioners in the public sector.

1. Appropriate ICT models must be developed to meet medical practitioners' information needs for different selected scenarios considering the infrastructural and social-economic constraints with some field testing within the existing infrastructure. Internet, books among others will be suitable in the public hospitals in Ghana.
2. Medical practitioners are encouraged to accept and practice EBP through workshop/continuous medical education. As most of the literature sources are foreign materials though good, there is the need for local studies to be carried out to suit the current conditions of the environment.
3. The Medical and Dental Council should encourage all practitioners to attend courses on EBP as part of the CPD ramification purposes.

4. Proper education must be given to healthcare providers on the relevance of EBP into their practices. There is also the need for re-orientation, retraining and joint effort to make EBP work.
5. Each clinician should take evidence based practice as personal responsibility to get abreast with information in their field of practice.
6. Continuous Professional Development organised by Medical and Dental council should provide room for medical practitioners to be refreshed on new and current medical practices while all barriers to use of EBP should be provided by making more funds available to facilitate the use of ICT in clinical care all around the hospitals with 3G broadband internet facility to all the departments and colleges within the healthcare institutions in the country.
7. Clear guidelines based on evidence based usage in the hospital in Ghana should be put in place. There should be regular clinical audit to assess the use of best practice guidelines.
8. Health institutions should make it a priority to inculcate EBP into their diagnosis and treatment and incorporate clinical audits in their institutions regularly or by setting time frame to review clinical priorities utilising current evidence based practice.
9. The Ghana Health Service and Ministry of Health must set up committees to regularly review and update treatment guidelines at least yearly and communicate changes to practitioners, create awareness and make available free internet access to all medical practitioners.
10. Libraries in the institutions under study should subscribe to journals to get up date on EBP for the training of new doctors to start using the EBP before entering into practice.

11. Finally, Journal clubs should be strengthened. When more journal reviews are done in institutions where healthcare is given, audits of practice should be carried out to see whether practitioners are adapting the evidence based practice.
12. It is my hope that others impressed with other aspects of the study I have not handled will investigate those aspects in future researches.

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- (<http://www.cochrane.org>)

APPENDICES

A. QUESTIONNAIRE

DEPARTMENT OF COMPUTER SCIENCES

INSTITUTE OF DISTANCE LEARNING - KNUST

This study is intended to find out the current level of adaption and application of evidence based practice (medicine) among medical practitioners in the public sector in diagnosis and it is mainly for academic purpose. Confidentiality would be ensured and in no way would the information given be used for any other purpose. Your cooperation in answering these questions would be very much appreciated. Thank you.

QUESTIONNAIRE

1. Age: 21 - 30 [] 31 - 40 [] 41 - 50 [] 51 - 60 [] 61-70 []
2. Sex: Male [] Female []
3. Marital Status: Married [] Single [] Widowed [] Divorced []
4. i. First medical qualification.....
ii. Place of Study.....
5. Any further studies Yes/No

Qualification	Place of Study

6. What is your status in the institution? Consultants [] Snr Doctors [] Jnr Doctors []
7. What is your area of practice?
8. How long have you been in practice?

9. Have you heard of Evidence Based Practice/medicine? Yes/No

10. Are you conversant with the procedures in the practice? Yes/No

11. Do you use this practice in your everyday work? Yes/No

Reasons

12. Do you find it useful?

13. Where did you first get acquainted with Evidence Based Medicine?

14. Is it possible to adapt and apply Evidence Based Medicine in healthcare facilities in Ghana? Yes/No

Reasons.....

Questions 15, 16, 17 seek to assess the attitude, knowledge and application of EBP.

Please tick the appropriate response

15. **Attitudes toward EBP**

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
My workload is too great for me to keep up to date with all the new evidence					
I resent having my clinical practice questioned					
Evidence-based practice is a waste of time					
I stick to tried and trusted methods rather than changing to anything new					

16. Knowledge of EBP

	Very high	High	Average	Low
Research skills				
Information technology skills				
Monitoring and reviewing of practice skills				
Converting your information needs into a research question				
Awareness of major information types and sources				
Ability to identify gaps in your professional practice				
Knowledge of how to retrieve evidence				
Ability to analyze critically evidence against set standards				
Ability to determine how valid (close to the truth) the material is				
Ability to determine how useful (clinically applicable) the material is				
Ability to apply information to individual cases				
Sharing of ideas and information with colleagues				
Dissemination of new ideas about care to colleagues				
Ability to review your own practice				

17. Application of EBP

	Very often	Often	Not Often	Not at all
How often have you formulated a clearly answerable question as the beginning of the process towards filling this gap?				
How often have you tracked down the relevant evidence once you have formulated the question?				
How often have you critically appraised, against set criteria, any literature you have discovered?				
How often have you integrated the evidence you have found with your expertise?				
How often have you integrated the evidence you have found with your expertise?				
How often have you evaluated the outcomes of your practice?				
How often have you shared this information with colleagues?				

18. What do you think are the major problems facing the adaption and application of EBP in patient care in Ghana?

.....

19. What in your opinion is the way forward for EBP in Ghana Patient Care?

B. INTERVIEW GUIDE

DEPARTMENT OF COMPUTER SCIENCES INSTITUTE OF DISTANCE LEARNING - KNUST

This study is intended to find out the current level of adaption and application of evidence based practice (medicine) among medical practitioners in the public sector in diagnosis and it is mainly for academic purpose. Confidentiality would be ensured and in no way would the information given be used for any other purpose. Your cooperation in answering these questions would be very much appreciated. Thank you.

QUESTIONNAIRE (INSTITUTIONAL INTERVIEW)

1. Name of institution
2. Are you aware (as an institution) of the practice of Evidence based Practice or Medicine (EBP) in Healthcare?
3. What is the position of this institution on EBP?
4. Are there any existing policies in place concerning EBP in providing patient care in our health facilities? Yes/No
5. If, No, why are there none?
6. If, Yes, what are the policies?
 - i. How are the policies being implemented?
 - ii. How is the implementation being monitored and measured
 - iii. Are there documentary evidence to back it?
7. What are the challenges of implementing and measuring such a tool as EBP in Ghana?

NB: Copies of policies where available