AFRICAN RENAISSANCE IN HEALTH EDUCATION:

DEVELOPING AN INTEGRATIVE PROGRAMME OF UNANI-TIBB TRAINING FOR HEALTH CARE PROFESSIONALS IN SOUTHERN AFRICA

RASHID A. H. BHIKHA

Title of Thesis

African Renaissance in Health Education: Developing an integrative programme of Unani-Tibb training for health care professionals in Southern Africa.

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Student Name:	Rashid Ahmed Hassen Bhikha
Student Number:	2370721
Proposed degree:	Doctrine in Philosophiae (Ph.D.)
Department:	Faculty of Education,
	University of the Western Cape
Supervisor:	Prof Sandy Lazarus
Co-Supervisor:	Prof Dirk Meerkotter

DECLARATION

I declare that the *African Renaissance in Health Education: Developing an integrative programme of Unani-Tibb training for health care professionals in Southern Africa* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted here have been indicated and acknowledged by complete references.

Full name: RASHID AHMED HASSEN BHIKHA Date: 1/11/2004

Signed: ……

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Glossary of terms

Aetiology: The science of the cause of disease. In Unani-Tibb, disease usually arises from a disturbance in the balance of *humours*, or disharmony of the *temperament*, which *physis* is unable to redress completely, and in good time.

Alternative: *See 'complementary' below*

Complementary: Other terms are: alternative, fringe, natural, unorthodox, non-scientific, non-official, unconventional, marginal, and numerous other descriptions. Refers usually to self-healing and preventative medical disciplines, rather than reacting to and suppressing symptoms. Complementary medicine believes in the innate ability of the body to heal itself. In the context of this thesis, complementary refers to all medical disciplines, such as Unani-Tibb, which do not fit into the category of African Traditional medicine or orthodox//Western/allopathic medicine. It is often (erroneously) referred to as 'alternative'. However, in terms of the number of people undergoing complementary medical treatments, orthodox bio-medicine is actually the alternative system.

Cost-benefit: This is a complex calculation, where the input financial costs of a particular therapeutic intervention (time spent, medication, other treatment, travel, tests, administration etc.) are subtracted from the perceived financial benefits (return to work, fewer doctor visits, reduced drug intake, etc.) of the intervention. The difference represents the cost-benefit. This parameter answers the question: is the treatment justified in financial terms? In the thesis the cost benefit calculation is restricted to a comparison of the costs of Unani-Tibb medication versus orthodox bio-medicine.

Disease: In *orthodox bio-medicine*, disease is a disorder with a specific cause identified through recognizable signs and symptoms and bodily abnormality or failure to function properly, except that resulting directly from injury. *In traditional medical* systems, however, disease is not merely something from a tissue lesion or malfunctioning organ, but essentially a rupture of life's harmony. Disease is regarded as having socio-spiritual foundations. Consequently,

therapy goes beyond addressing the symptomology, in order to discover its deep-seated causes and subsequent ways of preventing it from recurring.

Doctrine of specific aetiology: Also called the *Germ Theory of Disease*. It is the theory of medicine, originating with Louis Pasteur in the 19th century, in which disease came to be associated with specific microbes, rather than imbalances in humours (q.v.), or complex convergences of elements in a person's unique lifestyle. This theory is considered to be the single most powerful force in the development of medicine in the past century. The theory has two main postulates: (a) that illness can be categorized into specific diseases, and (b) that each disease has a unique primary cause.

Empowerment: In the Unani-Tibb context empowerment refers to the active encouragement of the patient to take more responsibility for his/her health. This is achieved by means of relevant education of the particular condition affecting the patient and information on the form and impact of therapy he/she is to be exposed to.

Governing factors: Hippocrates believed that humans and other living organisms grow at the expense of the environment, taking from it what is necessary, and rejecting what is not. The various components of the environment, such as nutrition, heat and stimulus are consumed, and translated into available energy, memory and bodily structures. The individual's interaction with the environment, especially his/her capacity to digest its components, determines the health-disease status. Unani-Tibb has identified a number of environmental factors - *the governing factors* - which influence every human being and are responsible for creating and maintaining the body humours and temperament. As such, they are recognized as playing a vital role in determining health and disease. Examples are: environmental air, food and drink, movement and rest, sleep and wakefulness, various emotions, and the body's toxin load.

Healthcare practitioner: This refers to people qualified in medicine, homeopathy or nursing science who are actively practicing their discipline as a major part of their daily professional life. More generally the term would embrace pharmacists, physiotherapists,

physiotherapists, chiropractors and somatologists,

Holistic therapy: Holism is the tendency in nature to regard the whole as greater than the sum of the individual parts. In medical terms, holistic therapy describes treatment in which the physical, mental and social factors are taken into account, rather than just the diagnosed disease. Unani-Tibb regards the state of health as being the overall resultant of innumerable interactions between the physical, mental and spiritual variables within the body. The holistic approach is to treat the body as a complex whole, rather than adopt a reductionist view of health which examines specific individual forces and influences. *Holistic health*, therefore, is the state of well-being in which the person's body, mind, emotions and spirit are in tune with the natural, cosmic and social environment.

Humour: one of the four bodily fluids, originating in the liver, which are responsible for the diversity of temperament. The theory of humours, originally postulated by Hippocrates, is part of the medical philosophy in which the state of health and disease is determined by the relationship to the four humours - blood, phlegm, yellow bile, and black bile. Sanguinous humour (blood) has the qualities (q.v.) of hot and moist; phlegmatic humour (phlegm), cold and moist; bilious humour (yellow bile) hot and dry; and melancholic humour (black bile) cold and dry. For the maintenance of optimal health it is essential that the overall effect or combined qualities of the humours are in accordance with the temperament of the individual.

Indigenous knowledge systems (IKS): Rural communities including traditional healers have a rich, detailed, but undocumented spectrum of 'traditions and practices which have been handed down for generations. This is now being codified by information technologists as IKS.

Integrative medicine: This term, confusingly, has two distinctly different meanings. The more common one describes the use of different therapies, including both complementary and orthodox bio—medical, in a coordinated and mutually supportive programme of care for the greatest benefit of the individual patients. It selectively incorporates elements of

both medical paradigms into a comprehensive treatment plan. The less common one describes a comprehensive, primary care system that emphasizes wellness and healing of the whole person as the major goal, above and beyond suppression of a specific somatic disease. In this definition, integrative medicine views the patient holistically, having a mind and spirit as well as a body, and includes these dimensions in diagnosis and treatment (Ernst, 2004).

Macrocosm: The greater world or universe. More specifically, the person's immediate physical, psychological and spiritual environment.

Medical pluralism: The existence in a single society of differently designed and conceived *medical systems*. It would include the simultaneous coexistence of traditional medicine, complementary medicines and orthodox bio-medicine.

Medical system: A patterned interrelated body of values and deliberate practices, governed by a single paradigm of meaning, identification, prevention and treatment of illness. Each system has a number of attributes: (a) concept of disease causation; (b) nosology (naming and classifying of disease); (c) diagnosis; (d) investigations; (e) prophylaxis (prevention of disease); (f) therapy seeking and selecting behaviour; (g) therapy and management; (h) drugs/remedies; and (i) pharmacopoeias.

Microcosm: Man as an epitome of the *macrocosm*. Basically, the internal environment. The medium within 'us in which the living processes, physical and emotional, occur in dynamic equilibrium, determined by the balance in humoral composition.

Natural medicine: This broad term embraces the range of non-orthodox, non-traditional medical systems. It includes Unani-Tibb, Ayurveda, Yoga, Chinese medicine, Tibetan herbal medicine, Western herbal medicine (phytotherapy), naturopathy, homoeopathy and chiropractic.

Orthodox bio-medicine: Also termed modern, Western, allopathic or metabolic medicine. It is the knowledge, practices, organization, and social roles of medicine in Westernised cultures. Disease is viewed as a physical or mechanical disorder with little relationship to a person's psychological, social and spiritual experiences. It is differentiated from other medical care systems by quickly adopting innovations based on research and development in the scientific and technological fields.

Physis: The practice of Unani-Tibb is intimately involved with the concept of physis, the dynamic organizing principal present in all living beings. Physis directs, organizes, controls and repairs the myriad of living activities to ensure complete harmony between the body and the environment. Unani-Tibb practitioners direct their activities at assisting this inherent wisdom of the body in the healing process. In the health / disease context, physis is essentially the intrinsic ability of the body to preserve health and heal itself.

Quality: A distinguishing physical characteristic, such as heat or moistness, which confers individuality. In Unani-Tibb, the other qualities are coldness and dryness. Combinations of two non-opposing qualities (e.g., hot and dry; cold and moist) describe the humours.

Quality of Life: In this thesis this is a measure of the extent to which medical or other healthcare intervention improves the positive aspects, and diminishes the negative aspects, of the patient's everyday living. It is calculated from an appropriate range of subjective behaviour and attitude indices (physical activity, depression, sleeping quality, appetite, for example), which are assessed quantitatively.

Regimental therapy: This is the collective term for the range of Unani-Tibb treatment protocols which includes breathing techniques, purgation, diuresis, enemas, acupressure, exercise, meditation, heat therapy, and cupping.

Temperament: Individual character or natural disposition as determined by the reaction of the physical upon the mental constitution or personality. In Unani-Tibb, this is

determined by the relative predominance of the sanguine, phlegmatic, bilious and melancholic humours in a particular person. It is assessed by measuring the person's personality, physical characteristics and behavioural traits.

Traditional medicine: Also termed ethno-medicine. The totality of knowledge and practices, whether explicable or not, used in the diagnosis, prevention or elimination of a physical, mental or social disequilibrium and which relies almost exclusively on past experience and observation handed down from generation to generation, verbally or in writing. Disease is regarded holistically, so the organic and psychological components of disease are considered simultaneously.

Worldview: a particular philosophy of life, or conception of the world. For example, a Christian worldview revolves around the concept of the battle between good and evil.

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ABSTRACT

The present healthcare system in South Africa suffers from a number of serious deficiencies. Whilst orthodox bio-medicine is well established in most first world countries, its total introduction and implementation into all communities within South Africa faces many obstacles. The cost of diagnostic techniques, investigative procedures and pharmaceutical products, the availability of competent medical staff in the non-urban areas, and the lack of acceptance of the philosophy and practice of orthodox bio-medicine in rural regions are but some of the factors which conspire against the general application of this orthodox medical paradigm.

Another problem confronting healthcare and medical practice in South Africa, particularly at this stage of our historical development, is the absolute focus on orthodox bio-medicine, often to the detriment of other medical paradigms that also have advantages to offer. Can the integration of another medical paradigm, such as Unani-Tibb, enhance the practice of orthodox bio-medicine in this country?

The aim of the thesis was to investigate the possibility of integrating Unani-Tibb with orthodox bio-medicine (also termed conventional, Western or allopathic medicine) and assess its potential for improving delivery of an effective, affordable and appropriate healthcare system in South Africa. The research questions which the thesis seeks to answer is whether this integration is possible and whether the delivery of healthcare to the South African population can be enhanced. Changes in the provision of medical education are necessary and occupy a pivotal role in allowing for this integration.

Unani-Tibb is a traditional medical system practiced extensively on the Indian sub-continent and in other parts of the world. At present, however, it is minimally practiced in South Africa. Its primary principle is the energetic promotion of health maintenance behaviour and the prevention of disease, through effective application of dietotherapy, pharmacotherapy and other interventions, as well as the empowerment of the patient towards adopting behavioural changes and lifestyle adaptations. One positive aspect of Unani-Tibb is that it has many features in common with both orthodox bio-medicine and African Traditional medicine. These commonalities should allow for greater acceptance by orthodox healthcare professionals, as well as the general population.

The first part of the study involved the research and conceptualisation required for the production of a series of customized training modules which introduced the theory and practice of Unani-Tibb. A twelve-month part-time training programme based on these modules was subsequently conducted with a number of healthcare professionals presently in active practice and with a background of orthodox medical or nursing healthcare. This outcomes-based training programme included a number of specifically designed training activities, such as case studies, practical exercises and assignments. Appropriate evaluations and assessments were pursued in order to measure performance outcomes and attitudes. Questionnaires for assessing the motivation and satisfaction of the participants were also completed.

The second part of the study was in the form of a pilot participant research project, in which the participants applied the information from the integrative programme to a number of chronically ill patients who had previously been treated with standard orthodox bio-medical procedures. The parameters derived for clinical efficacy, cost-benefit and improvement in Quality of Life from Unani-Tibb treatment were then compared to equivalent results obtained by orthodox bio-medicine. In all parameters inspected, the integrative training programme compared favourably to orthodox bio-medical practice. Not only was there an improved clinical efficacy, but the cost-benefit was shown to be superior in most indices measured. The Quality of Life comparison, which assessed the patient's total health status, subjective behaviour and attitude, generally favoured the integrative training programme.

The thesis serves to suggest that the integration of Unani-Tibb into orthodox bio-medical training in South Africa is a distinct possibility, and could ultimately allow for treatment which is clinically acceptable, cost-effective and which provides an improved Quality of Life for the population as a whole. I suggest that this pilot study be repeated more extensively, thereby allowing for a more confident and objective assessment.

Keywords: Unani-Tibb; Healthcare education; Complementary; Integrative; Holistic; Orthodox bio-medicine; African Traditional medicine; Cost effectiveness; Empowerment; Disease management.

CHAPTER ONE

Introduction to the thesis

1.1. Introduction and motivation

Unani-Tibb is a comprehensive and holistic health system based on the principles of Hippocrates, Galen and Ibn Sina and is currently practiced in India, Pakistan, Bangladesh and Sri Lanka. It was approved as the eleventh modality of the Allied Health Professions Council of South Africa (AHPCSA) in August 2001 (www.ahpcsa.co.za).

The healthcare scenario in South Africa consists of a number of medical systems existing simultaneously, and operating in parallel. There is the professional, legally sanctioned orthodox bio-medical system well situated in both the public and private sectors, superimposed upon an extensive but largely unstructured system of African Traditional medicine which flourishes in both the rural and urban environments. In addition to these there are the complementary medical systems, which include, amongst others, Homoeopathy, Chiropractic, Ayurveda, Chinese Medicine and Unani-Tibb.

The broad adoption of orthodox bio-medicine in the foreseeable future is beyond the reach of many, if not most, of the South African population, due to the major obstacles of cost, culture and logistics. The dilemma confronting those involved in drawing up policy for future healthcare is how to provide basic medical care and treatment which is effective, affordable and appropriate for the population as a whole, without compromising the advantages that orthodox bio-medicine undoubtedly brings.

The White Paper of 1997, for the Transformation of the Health System in South Africa (www.anc.org.za/ancdocs/pubs/whip/whip12.html), as well as the National Drug Policy of 1994 (www.sadap.org.za/ndp/tradi.html), both issued by the South African Department of Health, advocate the integration of traditional and other medical systems to meet the objectives of providing affordable, effective and accessible healthcare to all sectors of our population.

Although there is a noticeable trend towards orthodox practitioners becoming increasingly involved in various forms of complementary medicine (homoeopathy, for example), or using techniques

associated with complementary medicine (such as acupuncture), at present, the different healthcare systems in South Africa are not integrated to any significant extent. Recently, however, there have been initiatives at attempting to integrate traditional medicine into the national health plan of South Africa as well as other African countries. The aim of this study is to establish whether Unani-Tibb could be suitably integrated into a training programme for orthodox bio-medical healthcare professionals in South Africa, and to assess, via a pilot study, its potential on improving the delivery of healthcare in this country.

In this introductory chapter the problems confronting healthcare delivery in South Africa are highlighted, the aim and objectives of the research are stated, and the basic research questions relating to the motivation for the study are posed. An outline of the research design and methodology employed is provided, and finally an overview of the thesis is documented.

In order to understand the reason for this study, the results obtained, and the conclusions arrived at, a basic knowledge of the principles and practice of Unani-Tibb is essential. A brief outline of this medical discipline will therefore be included in this chapter. In addition, detailed descriptions of the main terms used in this thesis have been presented in the preceding *Glossary of Terms*. They cover the key Unani-Tibb concepts, such as physis, qualities, temperament and humours, and terms utilised in the clinical aspects of this thesis which may need elaboration, for example, holistic therapy, Quality of Life and cost-effectiveness. Also included are accepted definitions for terms and concepts relevant to this thesis, such as worldview, medical systems, traditional medicine, disease, and orthodox bio-medicine.

1.2. The South African healthcare context

Worldwide, healthcare is facing critical challenges. As Benatar and Van Rensburg comments:

> The explosion in scientific knowledge, its costly application to medicine and healthcare, coupled with rapid population growth and changing disease profiles during [the last] century, have led to intense debates on the design, structure and funding of healthcare systems. No perfect solutions have been found and healthcare systems in many countries are both of a mixed nature and in unstable states of change (Benatar and Van Rensburg, 1995:16).

The provision of effective, affordable and appropriate healthcare is acknowledged as one of the biggest challenges facing South Africa and probably all developing countries throughout the world. The high - and rising - cost of healthcare associated with orthodox bio-medicine is largely affordable only in first world countries. This is supported by the observation that traditional, complementary (or alternative) medicine is, according to the World Health Organisation, used by more than 80% of the world's population in the Southern Hemisphere, particularly within the context of primary healthcare (WHO Fact Sheet No 271, June 2002).

The challenge concerning our country, however, is probably unique, as we are coping with the simultaneous task of establishing a cohesive social democracy. As a nation in development, one major problem confronting us, with our highly heterogeneous population, is the provision of appropriate healthcare for all of South Africans, now and for the foreseeable future. This essential function of the State has to be viewed against a backdrop of rapidly escalating costs in diagnostic and investigative techniques, a deterioration in the numbers of competent staff, increasingly expensive therapeutic and pharmaceutical products, and growing demands on pharmacists and other healthcare role players. There is also the intervention of numerous other agencies which have a direct or indirect interest in the citizen's healthcare, such as medical aid societies, medical insurance, and the medical media and government organizations.

There is much ongoing debate about the type of healthcare system which is appropriate for South Africa. Several models are possible, ranging from one dominated by a highly developed and subsidized private sector at one end of the spectrum, through to a totally socialized healthcare system heavily committed to primary healthcare at the other end. Although a true picture of the healthcare model for South Africa has yet to emerge, there are indications that greater emphasis will be placed on primary healthcare, rather than on private medicine.

The question of how to provide acceptable healthcare for the whole population is especially pertinent in the light of the serious health challenges looming before us. A review of the progress reported in both the South African government's Year Book of 2002 (www.gov.za/yearbook) and in the White Paper issued by the Department of Health of 1997 (www.anc.org.za.ancdocs), highlights the impact that limited financial resources have on the quality of healthcare in South Africa. To illustrate the point, 55% of South Africans still live in poverty, with 75% of citizens living in rural

areas still unable to access basic services (Parliamentary Bulletin, No 12: 17 April 1997; www.anc.org.za).

The impending escalation in the incidence of a number of diseases is also a source of great concern to our healthcare authorities. Irrespective of the debate about the actual incidence of HIV infection and AIDS, and the associated mortality, there is now strong, unequivocal evidence that this pandemic is making serious inroads into the efficient provision of healthcare throughout the country. The incidence of tuberculosis remains stubbornly high, and is expected to rise even higher as HIV and AIDS take its toll. Moreover, sporadic outbreaks of malaria and cholera are still common, and expected to become increasingly frequent and severe as global warming and other environmental changes exert their influence. Added to this, are the diseases relating to lifestyle which afflict a number of both developed and developing countries and are being increasingly noted in sectors of the South African population. Heart failure, coronary heart disease, diabetes, asthma, osteoporosis and other disorders are now assuming the form of serious epidemics. These chronic diseases are in fact one of the major healthcare challenges of the new millennium (Bradshaw & Nannan, 2004). The upsurge of these diseases are now beginning to make their presence felt in South Africa. The need for a different approach to healthcare provision is becoming more acute in the light of major changes in the 'spectrum of disease' which will badly affect us, sooner or later.

In most developing countries there are a number of healthcare sectors operating simultaneously. South Africa not only has a well-developed popular sector, which is based on self-help and self-medication, but we also have a thriving traditional or folk medicine sector, occupied predominantly by traditional healers. Finally, there is the powerful professional sector. This consists of both the orthodox bio-medicine practitioners, as well as the providers of a wide range of complementary therapies and philosophies. These sectors are not hermetically sealed, as there is a substantial passage of patients seeking health advice and alleviation of disease between these sectors - the so-called medical pluralism (Gilbert, Selikow & Walker, 1998). This situation will be expanded upon in subsequent chapters.

Orthodox bio-medicine is the official, legally sanctioned healthcare system employed in South Africa in both the private and public healthcare sectors, and a number of other developing countries. It is based on the fundamental concepts which originated in and spread from Western Europe and North America. In South Africa, this situation is the result of the imposition of colonialism over the

past three centuries. In spite of this the older traditions persist, and the majority of the population still seeks medical advice from traditional healers (Sindiga, Nyaigotti-Chacha & Kanunah, 1995; Van Rensburg, Fourie & Pretorius, 1992). Prior to colonisation by European settlers, the African Traditional medical system was the only form of healthcare available to most of the sub-Saharan population. Western medicine was initially introduced by Dutch settlers in South Africa, and is evident from the practice of Boereraad. This informal system can justifiably claim traditional status in the light of a number of concepts which were similar to, and sometimes derived from, African Traditional medicine. However, Dutch folk medicine has greatly diminished in recent years, as their traditional remedies have been progressively superceded by modern drug therapy (Van Rensburg et al, 1992).

The evolution in the practice of western medicine, which occurred in Europe at about the time of the Industrial Revolution also manifested itself in South Africa. This emerged as a result of the changes in healthcare greatly influenced by the Industrial Revolution, the specific aetiology theory (germ theory) of disease, and the rapid advances in medical technology of the last fifty years (Gilbert et al, 1998).

With respect to orthodox bio-medicine, there are three basic issues which are relevant to the present unsatisfactory situation; (a) the high cost of healthcare associated with this medical paradigm; (b) the actual effectiveness of orthodox bio-medicine with respect to clinical efficacy; and (c) the impact on the patient as measured in terms of Quality of Life.

If the development of a healthcare programme which combines the optimum elements of both orthodox and complementary medicine can show substantial benefit in the provision of effective, affordable and appropriate healthcare, it could indicate a viable approach to meeting this important challenge in our growing democracy. As orthodox bio-medicine has the same roots as Unani-Tibb, the integration of these two systems could well be achieved. The value of this study was to examine whether this integration was plausible in practical, clinical terms.

The thesis, therefore, reports on the development of an integrated therapeutic model of treatment which could be appropriate to the healthcare environment in which we live, and which could be introduced to the South African medical situation.

1.3. The theoretical framework for the study

Unani-Tibb (lit. *Greek medicine*) is a comprehensive and holistic health system based on the principles of Hippocrates, Galen and Ibn Sina (also known as *Avicenna*). It is based on an established, accepted philosophy that allows for a better appreciation of the complex nature of our human constitution, how we are built up, and how we relate to both our internal and external environment. By regarding our human nature in the broader context of the universe in which we live, we can better understand the causes of illness, and equally important, how to achieve and maintain good health.

Central to the philosophy of Unani-Tibb is the relationship between an individual and the environment. In a state of good health, this relationship exists in a harmonious balance or homeostasis (Bhikha & Haq, 2000). When a person is ill, this balance is disturbed. In this situation, the body attempts to restore this balance, by resorting to a range of metabolic, defensive and other strategies. The emergence of signs and symptoms is a signal that the various remedial processes are not succeeding in restoring homeostasis. Unani-Tibb considers that the true role of the healthcare professional is to assist the patient in supporting the body's remedial mechanisms, collectively known as physis, whilst at the same time relieving the patient's distress (Chishti, 1991). This role can easily be understood, incorporated and implemented by healthcare practitioners.

Particularly relevant to this study is that the clinical concepts which underlie the practice of Unani-Tibb also provide for cost-effective, low-tech diagnostic techniques. Instead of resorting immediately to a number of expensive high-tech investigative procedures, as is frequently the case with orthodox bio-medicine, Unani-Tibb allows for early diagnosis of clinical syndromes long before the appearance of symptoms. By doing so, it encourages early clinical intervention, thereby preventing or reducing the impact of more serious diseases (Bhikha & Haq, 2000). Unani-Tibb also offers a wide choice of effective, non-intrusive, therapeutic procedures which could be included in an integrative approach.

However the greatest strength of Unani-Tibb is arguably the emphasis it places on patient empowerment. The patient is encouraged to take part in a dialogue with the healthcare professional, and is actively involved in the diagnosis and treatment of his or her condition, and subsequent preventative measures. This approach allows the patient an important role in the therapy and management of his or her clinical disorder. This component of primary healthcare is in keeping with

the ethos of the White Paper which has been formulated to "achieve comprehensive primary health care, to deliver quality healthcare for all citizens, efficiently and within a caring environment." (Parliamentary Bulletin, No 12-17 April 1997:1).

The principles and practices of Unani-Tibb were widely applied in most societies, including the Western world, until relatively recently. In Europe, the practice of Western holistic medicine was well established up to the 18th century. In fact, it was only with the advent of the concept of the specific aetiology of disease that there began a fundamental departure, or schism, from the general practice of Unani-Tibb. Even so, Unani-Tibb is still practiced to this day by around a billion people.

Many Unani-Tibb procedures are consistent with the cultural practices of several of our indigenous peoples. For example, the use of herbs and other naturally derived medication, the taking of purgatives as blood cleansers, the practice of cupping and the importance attached to the psycho-spiritual component in the healing process are actively practiced in a number of local clinical practices. Moreover, many of the principles of Unani-Tibb are also contained within Ayurvedic medicine, which originates closely geographically, as well as other related medical disciplines such as Homoeopathy, Chinese Herbal medicine, Naturopathy and Western Holistic medicine.

With respect to the practice of orthodox bio-medicine, the impressive progress in medical technology has enabled healthcare professionals to accurately measure the body's biochemical and physiological parameters, thus leading the way to improved diagnostic procedures and innovative surgical procedures. This has contributed positively to the striking development of healthcare. However, in focusing extensively on the intricacies of the body, and the multitude of complex interactions occurring within, orthodox bio-medicine has unfortunately lost sight of the bigger, whole picture.

Unlike Unani-Tibb and most traditional systems of medicine, orthodox bio-medicine is predominantly concerned with the purely organic nature of disease. It tends to see the body as a complex machine, and generally diminishes the link between mind and body. It is focused almost exclusively on cure, indicated by the disappearance of the signs and symptoms of the disease. It is largely unconcerned with activities which could prevent or ameliorate the disease in the first place, or therapy without resorting to drugs or surgery at the earliest opportunity. Moreover, disease is perceived as a threatening intruder which threatens the body, and needs to be expelled as expeditiously as possible. Treatment focuses exclusively on the isolated individual as the site of the

disease, and object of treatment. There is little, if any, concern about the relationship of the person to his or her environment, whether internal or external. Finally, orthodox bio-medicine enthusiastically advocates the hospital, the clinic, or the consultation room as the site for treatment, excluding the patient from familiar surroundings and supportive family (Gilbert et al, 1998). Many of these features are alien to a majority of our population, which accepts the role of external influences and personal behaviour as important determinants of health. This was noted some considerable time ago by McKeown (1976).

The change in medical philosophy in favour of the doctrine of specific aetiology, which originated at the time of the industrial revolution, had far-reaching consequences. The main one was that it resulted in the holistic principles that were the very foundation of orthodox bio-medicine at the time, being summarily discarded. The lack of a holistic approach in orthodox bio-medicine - which itself traces its roots back to Hippocrates and other medical pioneers - is one of the main shortcomings of orthodox bio-medicine, resulting in the poor understanding of the real causes of illnesses as well as in the treatment applied. It is also reflected in the increased interest worldwide in, and movement to, complementary and integrative medicine.

This lack of a holistic approach within orthodox bio-medicine has initiated many attempts at integrating complementary medicine in order to address this perceived shortcoming. This approach at attempting to integrate selected aspects of complementary medicine into orthodox bio-medicine has been under considerable scrutiny over the past decade or so. Although there are many different views of what constitutes integrative medicine and holistic medicine, the move to restore holistic principles into orthodox bio-medicine is without a doubt a non-negotiable necessity for the new millennium (These aspects of integration and holism will be elaborated on in Chapter Two).

As both orthodox bio-medicine and Unani-Tibb have the same historical roots, the integration of Unani-Tibb into orthodox healthcare practice in South Africa should not pose insurmountable problems. Also, as many of the health practices, both prophylactic and therapeutic, of Unani-Tibb are similar to those of African Traditional medicine, this integrated model may be favourably accepted by the South African populace at large.

1.4. Study aim, objectives and research questions

The *aim of the study* was to examine the effectiveness, affordability and appropriateness of integrating Unani-Tibb into a training programme for healthcare professionals with a background of orthodox bio-medicine in South Africa.

The study was required to give an indication as to whether Unani-Tibb could be readily integrated with orthodox bio-medical practice, as well as to ascertain whether the integrative programme enhanced the effectiveness, affordability and improved Quality of Life of the patients. If the outcomes were to be positive, then the concept of integrating other healthcare models, more particularly African Traditional medicine, with orthodox bio-medicine could be pursued with some confidence.

The *objectives of the study* were:

(a) To critically review the current health scenario in South Africa with respect to its efficacy, affordability and appropriateness, as measured by Quality of Life parameters.
(b) To identify the potential role of Unani-Tibb in the orthodox bio-medical system.
(c) To develop a suitable integrative training programme for orthodox bio-medical healthcare professionals.
(d) To implement and evaluate the training programme.
(e) To assess the impact of the programme in terms of clinical efficacy, cost effectiveness and Quality of Life.

There were two *research questions* which the thesis was directed at answering:

(a) To determine whether the philosophy of Unani-Tibb could be effectively integrated into a training programme for orthodox bio-medical healthcare professionals; and
(b) To determine whether this integrated programme could assist in the enhancement of the delivery of orthodox bio-medicine with respect to effectiveness, affordability and Quality of Life in South Africa.

1.5. Research design and methodology

The research design and methodology employed in this thesis is described in greater detail in Chapter Three. However, the sequence of research processes employed in the pursuit of this topic could be summarized as follows:

(a) A literature survey of the current healthcare scenario in South Africa with the challenges it faces with respect to efficacy, affordability and appropriateness. Included in this is a review of orthodox bio-medicine as well as a brief overview on African Traditional medicine.

(b) A literature review of the principles and practice of Unani-Tibb and its possible role in an integrative training programme.

(c) A needs analysis of the required integrative training programme.

(d) A review of current training in orthodox bio-medicine in South Africa, a well as Unani-Tibb internationally.

(e) The origination, planning and development of the integrative training programme, with the required outcomes and content identified. The development included the planning and development of the training modules as well as a participant research project which compared the treatment of a number of patients with specific disorders according to standard orthodox bio-medical and the integrative training programme.

(f) The implementation of the training programme with an emphasis on recruitment procedures and logistics.

(g) The evaluation of the training programme with respect to the success or otherwise of integrating Unani-Tibb with orthodox bio-medicine as well as evaluating the benefit of this integrative programme in improving healthcare with respect to clinical efficacy, cost effectiveness and Quality of Life.

The ethical aspects of this type of study were implemented according to accepted standards set by the Ethics Committee of the University of the Western Cape.

1.6. Outline of the thesis

Chapter One: Introduction to the thesis

This comprises the rationale for the study, based upon a brief examination of the present healthcare situation in South Africa, and a motivation for an integrated approach to healthcare. The aims and objectives of the study are identified, together with an outline of the research methodology to be employed in achieving them.

Chapter Two: Literature review and theoretical framework

This chapter reviews the literature pertaining to the study, from both historical and practical perspectives. It contains a survey of the medical systems currently applied in South Africa, with some discussion on their deficiencies as I perceive them. This is followed by an historical perspective of Unani-Tibb, focusing especially on the pioneers of this therapeutic discipline. A detailed explanation of its underlying theoretical concepts, especially temperament and physis, and how Unani-Tibb is practiced in the clinical context is provided. This chapter also includes a section on medical education, specifically in South Africa, as well as the processes involved in the integration of orthodox bio-medicine and complementary medicine.

Chapter Three: Research methodology

Chapter Three elaborates on the approach and design adopted to answer the research questions. It embraces the qualitative and quantitative approach of the research, elaborating on methodology used for sampling, data collection and analysis techniques employed, as well as the overall planning, developing, implementing and evaluating the training programme.

Chapter Four: Presentation of results

Chapter Four documents the results obtained from both parts of the study, the first of which was to determine whether the Unani-Tibb philosophy could be integrated into orthodox bio-medicine. The details of the participants' motivation to enrol as well as feedback assessment and programme evaluations are presented and discussed. The results of the second part of the study pertaining to the participants' research project measuring clinical efficacy, cost effectiveness and Quality of Life are also documented. The interpretation of both results are also included in this chapter.

Chapter Five: Discussion on results

Chapter Five discusses the impact of the results and interpretation thereof, in order to ascertain whether the aims and the objectives of the thesis have been achieved. The relevance of the results of the integrative training programme with respect to its integration, and the benefit derived by the participants as well as whether the programme was able to improve clinical outcomes, provide cost-effectiveness and is appropriate for the South African scenario is discussed.

Chapter Six: Conclusion and recommendations

In the final chapter the conclusions drawn from the results are made, and their implications for present medical care and health maintenance in South Africa are presented. It is followed by recommendations for future research activities emanating from this study. This chapter also includes a comprehensive evaluation of the programme, detailing both the positive and the negative aspects.

1.7. Summary and conclusion

There are many challenges facing healthcare in South Africa which orthodox bio-medicine in its present form is unable to meet for, *inter alia*, financial, logistic and cultural reasons. From an orthodox bio-medical perspective, the current orthodox bio-medical approach to treating most conditions with one or more pharmaceutical preparations cannot meet the needs or demands of the 21st century.

Most of the diseases which confront our healthcare practitioners are not simple in origin, but multi-factorial in nature, so are unlikely to be amenable to basic pharmacological intervention. In addition, there are a multitude of confounding aspects of present day living which can trigger or aggravate numerous clinical conditions. Poor dietary habits, constant anxiety and unrelenting stress, poor breathing technique, inadequate rest and exercise, and a rapidly deteriorating, toxin-laden environment, to list a few, are now more than ever playing a significant role in our nation's health.

The South African Department of Health has identified the integration of healthcare systems as one of the options to meet the challenge of healthcare in the new millennium. Could the integration of Unani-Tibb into the orthodox bio-medical model be one such example?

This pilot study reports on the development of an integrative training programme of orthodox bio-medicine with Unani-Tibb for healthcare professionals and its impact on the provision of effective, affordable and appropriate healthcare.

In the following chapter, I detail the theoretical framework for the study, in which a survey of the available literature assumes a position of major importance.

CHAPTER TWO

Literature review and theoretical framework

2.1. Introduction

This chapter will survey (a) the current healthcare and medical systems within the country; (b) the available literature on the current medical systems being practiced in South Africa; and (c) the background and philosophy of Unani-Tibb. Of particular importance is a review of the main deficiencies of the present healthcare system operating in this country. This review will form the basis on which the primary concepts of the thesis will be developed and specifically the need for the development of an integrative training programme. This literature review will then evaluate the medical education situation in South Africa with respect to all major systems of healthcare, and relate these to the pilot training programme reported in the thesis.

2.1.1. Terminology

At this stage, clarification regarding a number of terms used in the thesis is advisable.

Orthodox bio-medicine

One particular term which is prone to misinterpretation is modern medicine or 'orthodox bio-medicine'. This is variously termed 'Western', 'allopathic', 'conventional' or 'metabolic' medicine. Although it has been the predominant medical model in Europe, North America and Australasia for several decades, its influence has now extended to all parts of the globe, where it is practiced alongside other traditional systems. It is therefore the established system of medicine all over the world, the mainstream form of therapy in many countries, and usually enjoys both legal sanction and governmental support. As the emphasis is predominantly on the 'body as a living machine', the term 'orthodox bio-medicine' will be used in the thesis (Gilbert et al, 1998).

Complementary medicine

Complementary medicine has been variously termed 'alternative', 'fringe', 'natural', 'unorthodox', 'non-scientific', 'non-official', 'unconventional', 'marginal', and numerous other descriptions (Van

Rensburg et al, 1992). In this thesis, the term 'complementary medicine' will be the preferred choice to describe medicine other than traditional medicine or orthodox bio-medicine.

I feel that the term 'alternative' is a misnomer for a large percentage of the population outside the Western, developed world, for whom the so-called 'alternative' is actually the main system. "Alternative medicine has only ever been alternative in the minds of middle class first world consumers who experience scientific western medicine as their traditional medicine. For most people living on the planet, scientific western medicine is actually the alternative" (Bhikha & Haq, 2000: 13). As Gilbert and colleagues pointed out: "….orthodox medicine only provides a small proportion of healthcare in most countries of the world" (Gilbert et al, 1998: 63).

The term 'complementary medicine' is sometimes used broadly to refer to any treatment (whatever its nature) which is used by an individual to complement or support their first choice of medicine. For example, to a user of African Traditional medicine the additional choice of orthodox bio-medicine, Ayurveda medicine or Unani-Tibb would be considered as complementary to their first choice. Complementary medicine generally supports, not replaces, other forms of healthcare.

However, the hybrid term: 'complementary / alternative medicine' (CAM) has taken root in many parts of the developed, English-speaking world (Coulter & Willis, 2004). At present, however, there is no uniform, generally accepted definition. The one from the National Center for CAM in the USA states that CAM is:

> … healthcare practices that are not an integral part of conventional medicine. As diverse and abundant as the peoples of the world, these practices may be grouped within five major domains: alternative medical systems; mind-body interventions; biologically-based treatment; manipulative and body-based methods; and energy therapies (www.nccam.nih.gov/about/plans).

Holistic medicine

The term 'holism' is often used in connection with complementary and alternative medicine. Holism is a general term which views the whole as being greater than the sum of the individual parts. Holistic health is the state of well-being in which the person's body, mind, emotions and spirit are in tune with the physical, mental, spiritual and social environment (Segen, 1998). Holistic therapy in this study refers to treatment in which the physical, mental and social factors are taken into account, rather than just the overt diagnosed disease. Unfortunately, the term holistic has been

largely commandeered by the lay media to refer to anything which is alternative, fringe, unusual or even bizarre (Jones, 1998; Shealy, 1999).

Integrative medicine

Another term which has emerged in recent years is 'integrative medicine' (sometimes termed 'integrated medicine'). Again, there is a certain degree of confusion as to its exact meaning. There are in fact two distinct descriptions.

On the one hand it can be described as a

> comprehensive, primary care system that emphasizes wellness and healing of the whole person … as major goals above and beyond the suppression of a specific somatic [bodily] disease (Ernst, 2004: 565).

On the other hand, it refers to

> the use of different therapies, including both complementary medicine and conventional medicine, and different healthcare agencies and practitioners in a coordinated and mutually supportive programme of care for the greatest benefit of the individual patient (Ernst, 2004: 565).

This implies that the practice of orthodox bio-medicine can be enhanced by the simultaneous use of other treatment modalities. It also suggests that in clinical situations where orthodox bio-medical practice is inappropriate, or prohibitively expensive, or diminishing the patient's Quality of Life, the introduction of the complementary therapy is feasible (Crute, 2000).

Integrative medicine is not just about combining orthodox bio-medicine with other treatment modalities, but involves investigating why illnesses arise, and seeks the appropriate treatment given the patients' situation and beliefs. It also involves taking more responsibility for healthcare, and in particular, making appropriate and realistic lifestyle changes to promote personal well-being (Swan Hoo, 2000). In this thesis, the term 'integrative' is used to describe the Unani-Tibb philosophical principles and treatment protocols integrated with orthodox bio-medicine.

Quality of Life

The term 'Quality of Life' is, like 'health' or 'well-being', an ill-defined term, and means different things to different people. Most understand it intuitively to express a satisfaction with life as they presently experience it. Quality of Life encompasses the physical, mental and spiritual dimensions of their existence (Fayers & Madin, 2000). However, in order to differentiate between the general

sense of Quality of Life and the more specific one related to health, disease and therapeutic activities, Quality of Life in the healthcare context generally refers to 'health-related Quality of Life', so as to remove any ambiguity of meaning.

The aspects of Quality of Life that are selected for a particular study largely depend on the nature of the study itself, and are justified as such by the investigators. In some studies these aspects may include the patient's general health, the number and severity of the symptoms arising from their particular ailment, the degree of physical, emotional and cognitive functioning they are experiencing, their sexual behaviour, and their social well-being. In other studies the focus may be on the negative effects of treatment, such as side effects and other toxicities, or place greater emphasis on the impact of treatment on the patient's psychological state, such as anxiety, depression and sleep disturbances.

Irrespective of which Quality of Life dimensions are selected for inclusion in a particular study, all ultimately depend on the subjective response to particular questions posed by the investigator. This can create problems of understanding of specific terms, and this can be compounded by cultural factors. In this study, particular attention was paid to avoiding this potential problem, by judicious selection of terms used in the various Quality of Life dimensions used.

2.2. Healthcare within the South African context

2.2.1. Background

The general healthcare situation in South Africa should be viewed against the historical backdrop of European colonialism and its progeny, apartheid. The artificial nature of the healthcare system that we have inherited should therefore be seen within the context of the colonialist heavy-handed approach, in which Western orthodox bio-medicine was promoted to the exclusion of African Traditional medicine. Closer to the present, one of the consequences of the imposition of the separate development policies inherent in the strict application of the apartheid regime was the creation of a medical system that favoured the white enfranchised section of the community, to the detriment of the much larger, but disenfranchised Black, Coloured and Indian communities. The country's resources, from minerals to medical care, from communications to transport systems, were essentially and almost exclusively used to benefit the minority white groupings.

2.2.2. Present situation

Although numerous attempts at restructuring and improving healthcare in South Africa in order to ameliorate injustices have been attempted over the last 50 years, evident from the Gluckman Report (1944), and the Brown Commission (1986), no really significant improvement for all South Africans was attained until very recently.

As De Beers (1985) stated, and quoted by Van Rensburg and colleagues, when referring to the Gluckman Report:

> The tragedy is not that the proposals of the Gluckman Commission were not implemented. The tragedy is that they could not possibly have been implemented. There is no way that a society built on division, oppression and exploitation could accommodate a health service premised on unity, equality and the elevation of the needs of all above the needs of the privileged elite (Van Rensburg et al,1992: 63).

In the context of the democratic changes in South Africa, Van Rensburg and colleagues also stated:

> …This society is currently undergoing fundamental reform which has also brought the healthcare system into the trough of fundamental change. …healthcare in South Africa has at last reached a point where the obvious and grim features of inequality, inaccessibility, inequity and injustice will be breached (Van Rensburg et al, 1992: vii).

In 1997 the South African government outlined the White Paper for Transformation of Health System of South Africa, but as Van Rensburg and colleagues commented: "The South African healthcare system is, however, a highly complex institution. Any attempt at reform must take due cognizance of this fact" (Van Rensburg et al, 1992: vii).

Obstacles faced by the healthcare reformers include the perceived threat to income, fear, ignorance, vested sectional interests, and dominant value systems. In South Africa, there is an "almost automatic resistance to reform. Up to this time [1992] there have been few signs of fundamental, progressive change or reform." (Van Rensburg et al, 1992: 399).

There are undeniably numerous obstacles facing the reform of South Africa's healthcare system. These can be summarised as (a) scope, rate and depth of changes; (b) degree of support from consumers, authorities, professions; (c) soundness and clarity of process; and (d) the general and pervasive fear of change (Van Rensburg et al, 1992). These obstacles to change are also part of the European legacy, and have their parallel in other parts of the world where reform of powerful

institutions were undertaken. A prime example is supplied by the USA, where much in the way of major obstacles and strong resistance was placed in the path of the Civil Rights Movement, whose aim was desegregation and justice for all ethnic groups within the country (Lazarus, 2004).

Medical ideology is shaped and determined by different forces. In many ways, the country's medical ideologies are compatible with the capitalist model of the economy. In this, the profit motive is the foremost priority, so it is unlikely that the medical system will resort to social origins of disease, collective responsibility, democratisation of medical skills, and community control of medical facilities. It is an uncomfortable fact of life in South Africa that all possible mechanisms are employed to ensure that capitalist ideology and values are advanced and perpetuated in the practice of healthcare (Van Rensburg et al, 1992).

Healthcare delivery in this country is controlled by the two major sectors, private and public. Orthodox bio-medicine in South Africa has long been practiced according to capitalistic or free-market principles, and healthcare privatisation was established as far back as the 1880s. The public sector was only initiated relatively late in the 20th century. Even so, it has grown steadily in its reach, and eventually it gave the South African healthcare system its current pluralistic character. Pure privatisation has never been established anywhere in the country. At present there is a strong private sector, matched by a strong public sector. Nevertheless, there has been a pronounced groundswell, beginning in the 1990s, towards increasing privatisation, via self-reliance and market principles. Wherever there is an option to choose either private or public sector treatment, the selection of privatised care is generally the one selected (Gilbert et al, 1998). Today, privatised health care is stronger than ever before (Van Rensburg et al, 1992), but healthcare privatisation as presently conducted tends to confirm the inequity, injustice and inequality of the previous political system, and a socially accountable dispensation is becoming more unattainable and elusive.

Unfortunately, the problems of leaving healthcare at the mercy of market forces are manifold. Not only do we effectively have a two tier system based upon social class, but we have a well-developed profit motive that determines quality and type of healthcare. This exerts a powerful influence on the allocation of material, time and systems resources, and leads to substantial economic differentiation (Van Rensburg et al, 1992). In 1991, private sector healthcare consumed close to 50% of all resources, but provided for only 20% of the population (Gilbert et al, 1998). The situation today is probably similar. Another factor worthy of note is that the inexorable escalation of the costs of

private healthcare has been consistently above the consumer price index (CPI-X), or general inflation, for the past 10 years. A further important consequence of the trend to privatisation has been the diversion of qualified doctors and other healthcare professionals from the resource-strapped public sector to the relatively affluent private sector (Gilbert et al, 1998).

2.2.3. The socio-political aspect

Healthcare is a complex issue, with several dimensions – economic, social and political. This is a situation that has been long recognised by the World Health Organisation (WHO), and accepted as such. In fact, the WHO defines the purpose of healthcare as: "to contribute to the sustained economic and social development [of the population] by the promotion and protection of the health of the people" (Gilbert et al, 1998: 106). This has been implicitly recognised by the present South African government, and is evident from the re-structuring of healthcare provision in the country which is in keeping with the White Paper (1997) and the National Drug Policy (1994). Receiving particular attention is the costs of healthcare, and the far-reaching changes now being introduced in order to provide affordable medical treatment.

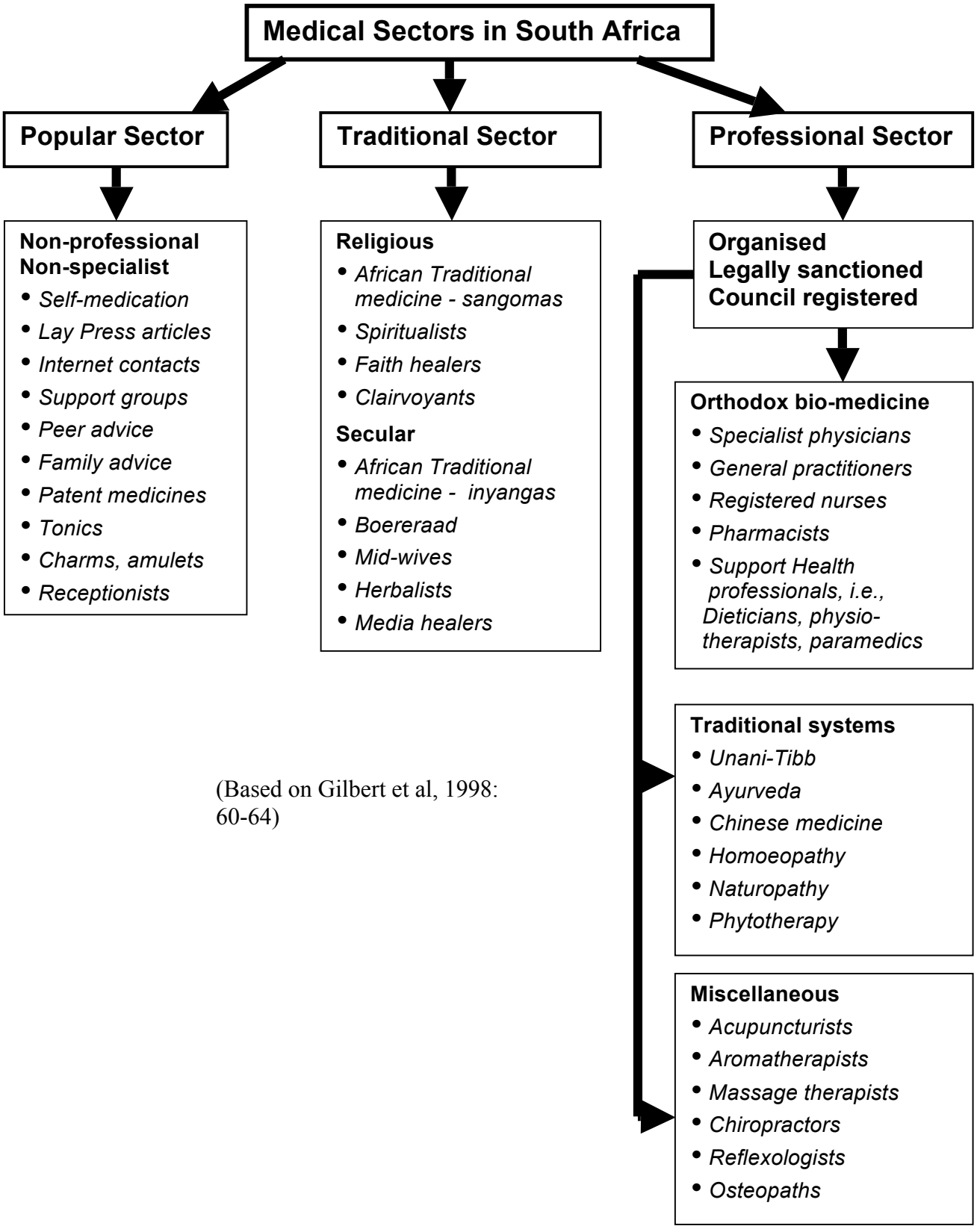
One facet of the socio-political aspect is the debate on the provision of a National Health Service. There are a number of ambivalent views on this contentious topic. According to one commentator, "… one could almost say that a National Health Service is the capitalist version of a socialist health system" (Van Rensburg et al, 1992: 393). Others feel that free market principles should operate, as long as they do not impede the functioning of the public healthcare sector. A National Health Service theoretically offers an attainable and feasible blueprint for the financing of socially accountable healthcare within a capitalist social dispensation: "equal rights for equal needs" (Abel-Smith, 1989: 20). This aspect of healthcare provision for the whole South African population is, from all accounts, receiving attention from the newly inaugurated government, especially in the face of numerous financial, legal and logistic challenges.

2.2.4. Healthcare sectors presently operating in South Africa

The healthcare scenario in South Africa, which has much in common with those of most developing countries, consists of a number of healthcare sectors operating simultaneously. These sectors include: (a) a well-developed popular sector, which is based on self-help and self-medication; (b) a

thriving traditional or folk medicine sector, occupied predominantly by African Traditional healers; and (c) a powerful professional sector, consisting of both the orthodox bio-medicine practitioners and the providers of a wide range of complementary therapies and philosophies (Gilbert et al, 1998).

The healthcare medical sectors operating in South Africa are summarized in the diagram on the next page:



(Based on Gilbert et al, 1998: 60-64)

The popular sector

This is the rather ill-defined non-professional, non-specialist domain of society, in which disease is first identified and defined, then treated with a range of readily available options. At this stage the family is the main arena of healthcare, as healers and doctors are not involved. The options resorted to in this sector are self-medication, usually based on assistance from relatives, friends, workmates or neighbours. Often people previously affected by the disease are brought into help. Self-help or support groups which focus on specific ailments and fellow religious practitioners may be involved at this stage. The medicines used in this sector include patent medicine and folk remedies. According to Gilbert and colleagues, 70% - 90% of medical treatment takes place in this sector (Gilbert et al, 1998).

The folk medicine sector

This sector includes traditional healers, midwives, bone setters, spiritualists and secular healers. Most healers have little societally accepted formal training, but share similar world-views and cultural values. Health is perceived as a balance between the person and his or her social, natural and spiritual environments. Practitioners claim a number of advantages over bio-orthodox medicine, such as the involvement of family, a more patient friendly approach, and that the healing process takes place in familiar setting.

The professional medicine sector

This is the highly organised and legally sanctioned provider of medical care. The healthcare professionals participating in this sector fall under the control of the well-established health councils, which include the Medical Association of South Africa, the Health Professions Council of South Africa, the South African Nursing Council, the South African Pharmacy Council and the Allied Health Professions Council of South Africa. This sector includes orthodox doctors, nurses, physiotherapists, paramedics and mid-wives.

It also embraces the professionalised traditional systems, especially Unani-Tibb, Ayurveda and Chinese medicine. Some of the disciplines, such as orthodox bio-medicine are sub-divided into generalists and specialists. Most, if not all of these healthcare providers are represented by dedicated councils, with which they are registered.

The coexistence of different healing systems

When the situation arises where several medical paradigms co-exist in a society, a number of models can emerge (Lazarus, 2004):

(a) *Exclusive:* One system (invariably the Western or orthodox system) will predominate, to the total rejection and exclusion of the indigenous or alternative medical systems.

(b) *Preferential:* All the medical systems operate, but only one will be formalised (again, invariably the orthodox bio-medical system), and other systems will be relegated to 'informal' practices which are at best tolerated, at worst ignored by the medical establishment.

(c) *Parallel:* Medical systems run separately but are supported equally. An example is offered by India, where orthodox, Ayurvedic and other medical systems operate and are supported equally, and without any apparent discrimination.

(d) *Eclectic:* In this model, a number of aspects of the different medical systems are selected and applied so as to serve the particular medical needs of the society. This model usually operates in an informal manner, with no concrete structure. It is invariably individualised for each practitioner at his or her own discretion. To a certain extent it is a 'trial and error' approach.

(e) *Integrative:* In this model different systems are brought together in a controlled, organized manner, in order to emphasise health education and actively encourage self-help. In this 'hybrid' model, practitioners of orthodox bio-medicine and complementary medicine cooperate in actively encouraging the patient to strive for personal well-being, and to seek out behaviour, dietary or environmental factors which may underlie a particular disease.

The present situation in South Africa, where over the past decade fundamental and far-reaching changes have taken place in the political, societal and economic spheres, reflects elements of all five models. Prior to the transformation process, the healthcare situation in South Africa was mainly exclusive, in that formal and legal recognition was only extended to orthodox bio-medicine practice. With the move to democracy in 1994 and the recognition of complementary medicine as part of the National Health Plan by the Department of Health, the preferential model is now in existence.

Although this recognition has been given in principle to complementary medicine, orthodox bio-medicine remains the only system entrenched in the public sector. However with the recognition of

all complementary systems and African Traditional medicine, the foundation for the parallel model is now being laid. With the present government policy promoting interaction between the different systems of healthcare, eclectic and integrative models are now in the process of developing. This development is evident where a certain degree of cooperation between different systems now exists. For example, some aspects of formal orthodox bio-medicine (such as certain diagnostic techniques and record keeping) are being introduced into African Traditional medicine practice (Leclerc-Madlala, 2002).

2.3. Current medical systems practiced in South Africa

As outlined above, the practice of healthcare in South Africa occupies the full spectrum of medical disciplines and doctrines, from cutting edge Westernised, orthodox bio-medicine, through to a comprehensive range of alternative/complementary medicine, to a well established African Traditional medical practice. The following section will examine, in more detail, the main medical disciplines presently practiced in South Africa.

2.3.1. Orthodox bio-medicine

History

Although the history of orthodox bio-medicine traces its roots back to Hippocrates, the Father of Medicine, the practice of orthodox bio-medicine today is not strictly in line with the principles of the founders of medicine (Rees & Shuter, 1996). Orthodox bio-medicine, as we know it, is just over a century old. It began during the period of the Renaissance, during which the objective thinking of the newly described causative theory of modern science slowly replaced the earlier ecological models which had predominated for nearly 2000 years. The new paradigm is often termed the Cartesian model, being named after the French philosopher, *Rene Descartes* (1596-1650) (Nuland, 1998). This model, it was claimed, invalidated the humoral concepts of the holistic principles of Hippocrates, Galen and Ibn Sina and promoted the ideology that man was separate from nature, and could be viewed objectively through experiment (Boussel; Bonnemann & Bove, 1982). This heralded the birth of scientific orthodox bio-medicine, and was reinforced by *Rudolph Virchow* (1821-1902), who demonstrated that disease begins with changes in living cells, and by *Louis Pasteur* (1822-1895) (Rees & Shuter, 1996) whose role in the development of the

germ theory of infection was of key importance (Bhikha & Haq, 2000; Gilbert et al, 1998). According to the new paradigm, disease suddenly became associated with specific micro-organisms - the so-called 'germ theory of disease'.

Philosophy of orthodox bio-medicine

The philosophy of this is based exclusively on the physical world, and rigorously excludes any explanation that goes beyond this (Gilbert et al, 1998; Hammond-Tooke, 1989). It regards as irrelevant any suggestion that involves the intervention of any agent from outside the natural system as the practitioners view it. Furthermore, orthodox bio-medicine regards the body in purely mechanistic terms - the complex physiological machine described by Descartes (Gilbert et al, 1998). In this model, health and illness are seen in terms of relationships between the body's components and sub-structures, and the mind is considered independent of the body. The causes of disease are accordingly scientific, and are presented in terms of such concepts as chemical imbalance, virus replication, serum levels, overload and so on.

Orthodox bio-medicine refers to the knowledge, practices, organisation, and social roles of medicine in westernised cultures (Good, Hunter, Katz & Katz, 1979). Disease is viewed as a physical or mechanical disorder with little relationship to a person's psychological, social and spiritual experiences. Treatment usually involves reacting to and suppressing symptoms, rather than encouraging self-healing or disease prevention (Thomas, 2002). Orthodox bio-medicine is scientifically based, and has led without doubt to astonishing advances in the diagnosis of disease, clinical investigations, pharmacotherapy, and in emergency treatment. It is differentiated from other medical care systems by quickly adopting innovations based on research and development in the scientific and technological fields. In addition, orthodox bio-medicine has followed the specialisation route, which has led to the plethora of specialists in disorders of specific organs, tissues and even cells - cardiologists, dermatologists and neurologists, for example. Although this may have certain advantages regarding the nature of specific diseases, it is based on the premise that patients should be regarded as collections of separate body parts and organ systems (Thomas, 2002).

Expected developments in orthodox bio-medicine

Pharmaceuticals. The introduction of new drugs into the South African market from the transnational pharmaceutical industry continues unabated. However, this steady stream of new

chemical entities from the massively supported Research and Development pipeline for the treatment of both common and rare ailments tends to be targeted at disorders which are often lifestyle-induced. New drugs for the amelioration of lipid disorders, diabetes, sleep problems, depression, osteoporosis, obesity, hypertension, and male impotence are well represented, and generate handsome profits. Other drugs are imminent for the treatment of degenerative diseases such as rheumatoid arthritis and Alzheimer's disease (Glynn, 1999).

However, as in the past, most of these drugs are designed to suppress symptoms of the disease, rather than confront the underlying dysfunctions responsible for the condition. Moreover, most of these drugs are indicated predominantly for the treatment of clinical disorders which are prevalent in the developed world, and not for the developing world, where they are relatively less common.

A common feature of these and other drugs which are newly introduced or expected shortly is their substantial price tag. This is justified in order to defray the enormous costs entailed in the Research and Development expenditure and costs of satisfying the regulatory authorities of the clinical efficacy, safety and tolerance, and stability of a particular new product. Unfortunately, the costs entailed in South Africa in using these new products on a long term basis (as the cure for the condition is not achievable, or even intended) is prohibitive to all but the economically advantaged.

In addition to these new and expensive drugs, there are advances being made in other therapeutic areas which promise more drugs of probably even greater expense. These will emerge as the bio-technology companies launch a plethora of monoclonal antibodies and bio-technology products, and, probably much later, the means for applying gene therapy. The costs of these products will be astronomical, and so exclude most of the population from their routine use. Only the privileged few will have access to these therapeutic agents, or those selected to participate in company-sponsored clinical trials. Their appropriateness for the South Africa citizenry, therefore, is likely to be debatable, their costs generally prohibitive, and their positive impact on the general healthcare of the population minimal (Newmarch, 2004).

There is also the prospect in the years ahead of medicinal products which appear as a consequence of deciphering the human genome. The massive investment in this project is expected to generate numerous agents which will be applied to the treatment of congenital diseases such as cystic fibrosis, and to a myriad of others including the cancers, degenerative diseases, and even to conditions like ageing itself. It goes without saying that these agents will also come with a

substantial price-tag, and, again, will inevitably be used by the more affluent sectors of the population (Ridley, 1999).

Diagnostic agents and techniques. The years ahead are expected to see the introduction of even more hi-tech diagnostic agents, many of them as a spin-off from the human genome project. The substantial number of diagnostic tests and assays for particular disease markers will be augmented even further by those presently moving along the Research and Development pipeline. Many of the more esoteric diagnostic agents presently employed will become more broadly applied, even routinely. There will be particular focus on assays or tests for specific cancers and degenerative diseases such as Alzheimer's disease, multiple sclerosis, autoimmune diseases and bone disorders.

Also expected in the not too distant future are more tests for detecting numerous diseases *in utero*. The present range of tests carried out on the pregnant woman's amniotic fluid is likely to increase several-fold to include a wider spectrum of genetic disorders, physical malformation, and inborn errors of metabolism.

On the horizon are a number of scanning techniques which will eventually supercede the computerised axial tomography (CAT) scan (www.imaginis.com/faq/history.asp). These will be used to examine, in minute detail, changes at the microscopic level, possibly pathological, which have occurred in the patient's body and are now beginning to pose clinical problems.

Surgical techniques. Improvements in the whole span of surgery will predictably continue apace. New techniques currently being researched in emergency medicine, for stabilisation, maintenance, and closure of the trauma victim in emergency medicine will become more generally applied. Elective surgery will see considerable advances in invasive techniques, extending 'key-hole' surgery even further. Complaints such as incontinence, for example, will be rapidly and very effectively remedied by simple surgery (Rezapour & Ulmsten, 2001). Micro-manipulative surgery will be more readily available for damaged and detached digits, even limbs.

The medicalisation of society. A number of common problems which were originally seen as having a social, psychological or behavioural origin are becoming increasingly drawn into the orthodox bio-medical sphere. A prime example is obesity. Rather than explore and correct the behavioural context for this condition, it is in many cases treated with an appetite suppressant. As these products usually act on the central nervous system there are potentially a number of side effects which can

adversely influence both body and mind. Another example is insomnia, which is in most cases the predictable result of poor sleep hygiene or disruptive personal behaviour. The standard response to insomnia by the orthodox practitioner is not usually a review of the sufferer's lifestyle, with attention being paid to aspects of diet, sleeping pattern, alcohol use, breathing, and exercise, followed by simple time-honoured remedies, but to a rapid prescription for powerful agents such as the benzodiazepines. These agents, which are invariably taken for extended periods of time, can be the source of several adverse reactions and eventually serious withdrawal symptoms. Other disorders that could in many cases conceivably fall in this category are social phobia, reactive depression, anxiety, attention deficit disorder, lipid disorders, skin complaints, irritable bowel syndrome and headaches.

Financing the application of these advances. These advances, if translated into new products and services for the market will, unfortunately, impose a huge financial burden on the shoulders of an already severely constrained national health economy. Many of the newer drugs come with a price tag which is measured in thousands of Rands *per month*. Moreover, they are largely symptom suppressive in action, so must be given according to a chronic, long-term regimen.

Furthermore, there is a trend towards hospitalisation as a prerequisite for the use of many of the new drugs and the tests that invariably accompany them, as well as for the new investigation techniques. Even for relatively short periods of admission, hospital costs are invariably substantial.

Going against the trend, two developments have occurred which tend to oppose the inexorable rise in costs. One is the switch to generic drugs, and the other is the emergence of day clinics for routine surgery and other invasive procedures. Regarding the former, South Africa is now, according to recent statistics, the third largest market for generic drugs (Newmarch, 2004). Companies supplying these are growing at a rate which is more than three times that for branded drugs. At present, they have captured a market share of around 20% in Rand terms, and much higher in prescription issue. However, the extent to which they can reduce the total load of medical treatment is open to discussion.

Deficiencies of orthodox bio-medicine

Some of the deficiencies of orthodox bio-medicine can be readily identified. Listed below are the ones of immediate relevance (Bhikha & Haq, 2000).

(1) Aetiology in orthodox bio-medicine

Although orthodox bio-medicine apparently acknowledges that many chronic illnesses such as heart diseases and diabetes arise as a result of numerous risk factors, in most instances the cause of disease is often reduced to a simple cause – a micro-organism, an inborn error of metabolism, a cellular membrane defect, or one or other physiological or biochemical malfunctioning (Gilbert et al, 1998). This simplistic approach has been described by René Dubois as the 'doctrine of specific aetiology' wherein illnesses are associated with or linked to specific causes (McTaggart, 1996). This also means that cures for diseases in modern medicine are to be found in 'magic bullets', which target specific causes such as microbes, dietary deficiencies, or drug receptor malfunctions.

(2)The concept of reductionism

By trying to link illnesses to a specific cause such as micro-organisms or receptor malfunction, orthodox bio-medicine invariably overlooks the extremely complex relationships that are now known to exist between the cells, tissues and organ systems of the human body (Nuland, 1998). Focus has almost completely shifted to the reduction of the human being into its component parts: different tissues, organs, and systems, which are acting virtually independently. This is evident in the increasing number of specialists – such as cardiologists, pulmonologists, nephrologists, dermatologists. Orthodox bio-medicine is now, belatedly, recognising that the whole body is much more than the sum of its individual parts, and that very complex inter-relationships exist between the multiple systems of the body. It is beginning to acknowledge the crucial importance of the extensive intercommunication between the body's cells, tissues, organs and body systems (Nuland, 1998). This change in attitude, has to some extent, been prompted by the relatively recent discovery and study of the myriad of hormones, other biochemical messengers, neurotransmitters, cytokines and growth factors (Ader, Cohen & Felten, 1995). In spite of this, however, the practice of orthodox bio-medicine remains largely along the reductionist lines.

(3) The approach to treatment

Orthodox bio-medicine accepts that the aetiology of many – in fact, most illnesses are not fully understood at the present time. It places greater emphasis on providing symptomatic relief. As a result, the usual treatment for most common complaints is mainly directed at offering symptomatic relief by pharmaceutical agents, as rapidly as possible (McTaggart, 1996).

Adopting measures to avoid or reduce the possibility of the clinical disorder recurring is not a major priority in orthodox bio-medicine. The underlying questions of what exactly is the source of the clinical disorder, and how this should be addressed in order to prevent further recurrence, receives scant attention (McTaggart, 1996). For example, a patient complaining of a recurrent headache to the family practitioner will invariably receive one or other of a number of analgesics. The cause of the headache will rarely be investigated, and little or no attention will be paid to lifestyle or behavioural factors which may aggravate or even turn out to be the origin of the headache. For orthodox bio-medical practitioners, symptom suppression is the norm, and usually adopted at the expense of directed healing. Particularly relevant is that the approach to treatment is invariably by means of medication and/or surgical procedures which are very often the first, if not the only choice.

(4) Adverse drug reactions and iatrogenic disorders

Side effects and idiosyncratic reactions are invariably associated with orthodox bio-medicine. This has become more evident with respect to the medications developed over the last twenty years (Lazerou, Pomeranz & Corey, 1998). One consequence of the extensive reliance on drugs is the emergence of side effects, metabolic imbalances in the body and other adverse drug reactions. Although these drugs are often designed to act at specific receptor sites in particular tissues and organs, there is invariably an overspill into otherwise normally functioning and uninvolved tissues and organs. At the whole body level, most, if not all, effective drugs are potentially linked to a myriad of side effects. At the organ level, kidney failure and hepatic dysfunction, for example, often accompany chronic medication with many drugs. At the tissue level, changes in parameters such as electrolyte composition, lipid profiles and glucose metabolism are commonplace with many drugs when used over the long-term (McTaggart, 1996). Not only are these adverse drug reactions troublesome to the patient, and lead to poor or non-compliance, but they may also encourage further costly medication in order to oppose the side effects experienced by the patient. This is evident in the vicious cycle of drug use leading to unacceptable side effects, leading to additional drug use, leading to other side effects, and so on.

(5) The doctor-patient relationship

The Age of Consumerism (or materialism) in which we live has also insidiously influenced much of the present-day practice of medicine. The healthcare practitioner's personal touch, which was a

strong feature of medical care in the past, often seems to be diluted or even non-existent (Weil, 1997). The patient is in many cases an anonymous number in a complex bureaucratic machine. Moreover, the advances of technology in diagnostic procedures has also led to practitioners relying less on obtaining information directly from patients, and more on reacting or responding to symptom profiles, indicator charts, evaluation scales, laboratory data, internal examination and other objective data generated, usually at substantial cost, from the patient. This tends to marginalise the patient, who is often reduced to a minor role in the doctor-patient contact. It more or less removes any responsibility in being an active participant in the healing process, so in effect, disempowering the patient (McTaggart, 1996). This is possibly a major reason why more and more people in South Africa, who are dissatisfied with current medical practice, are seeking the assistance of complementary healers (Copeland, 2003).

Another aspect of the practice of the doctor-patient relationship in orthodox bio-medicine is the lack of true recognition of the placebo effect (also referred to as ‘mind over matter’). Although the medical treatment employed may be substantially ineffective in real bio-medical terms, the patient often derives a substantial degree of benefit, which can occur in anything between 25% and 75% of patients. The reasons for the phenomenon are complex; they may be psychological in origin, or arise from the faith the patient has in the healing powers of the treatment, or in other factors which influence the restoration of harmony within the body. At best the placebo effect is regarded with suspicion, or tainted with accusations of quackery; at worst it is simply not recognised (Leviton, 2000).

(6) The high cost of orthodox bio-medicine

The origination and development of modern orthodox bio-medical drugs is an immensely costly exercise. This outlay obviously has to be recouped from, ultimately, the patient. This and other contributory elements had led to an almost exponential rise in the cost of medical treatment. Other factors involved are an over-reliance on diagnostic techniques, the prescribing of expensive medication, which is not necessarily an improvement on the previous agents it superseded; an increasing trend to hospitalisation, which in many cases is unnecessary; and to the application of avoidable or questionable surgical procedures (McTaggart, 1996).

(7) Chronic medication versus behavioural modification

Changes in lifestyle and behaviour in South Africa as well as in other countries have been very rapid in recent years. A virtual revolution has taken place in our society in matters such as the amount and type of food we consume, in our increasingly hectic, stress-filled daily routine, inadequate rest and relaxation opportunities, the increasing number of chemical and biological toxins to which we are exposed, and the poor, even threatening, environment in which many of our citizens exist.

These changes have heralded the onset of a number of disorders which were previously a medical rarity: obesity, hyper-activity, and diabetes in children and adolescents, cardiovascular disorders such as atherosclerosis, hypertension and heart failure in adults, rheumatic disorders in the elderly and aged, and anxiety, depression and sleep disorders in a number of vulnerable groups in our society. Other clinical disorders are increasing in frequency: bronchial asthma and allergic rhinitis, osteoporosis, and a number of neoplastic diseases (Bradshaw & Nannan, 2004). Most if not all chronic diseases tend to be treated with medication of one sort or another in orthodox bio-medicine. There is very little enthusiasm from the doctor to stress the need for behaviour modification by the patient, even though the clinical picture is often the result of, or aggravated by, poor lifestyle management (McTaggart, 1996).

(8) *The "want it now" syndrome*

An increasingly noticeable feature in the practice of orthodox bio-medicine is the expectation by both doctor and patient of rapid, even instantaneous, relief from the presenting symptoms. This is a carry-over from the one aspect of our modern Westernised consumerism-based society which is reflected in the 'want-it-now' syndrome. Clinical conditions which have taken weeks, months, even years to develop are expected to be healed in a short period of time, rather than dealing with the underlying problem. This phenomenon exposes a great deal of false expectations regarding the diagnosis and treatment of clinical disorders. Moreover, the responsibility for ameliorating an ailment is passed from the patient to the doctor and his armamentarium of drugs. The requirements for the patient to actually contribute to the healing process by modifying his or her behaviour are effectively cancelled.

The deficiencies of orthodox bio-medicine within the South African context, which highlights the need for an integrative training programme, will be discussed later.

2.3.2. African Traditional medicine in South Africa

History

African Traditional medicine can be regarded as an example of folk medicine. A practical definition of folk medicine is provided by the South African Encyclopaedia:

> Folk medicine includes any medium, treatment or ritualistic act which is applied or carried out to cure or avert illness; and is administered only as a direct consequence of the traditions and lore of a particular country. It is practiced in all good faith by lay-people whose conscious intention is to prevent and cure illness (South African Encyclopaedia 1975: 302).

It is an unfortunate fact of history that little was recorded about the traditional treatments practiced by the indigenous peoples of South Africa. African Traditional medicine traces its roots to Imhotep who is claimed to have belonged to the Twa (Barwa / ABatwa / Khoisan) people (Koka, 2001). History records that Imhotep of ancient Egypt (ca. 2630 BCE), who was vizier, philosopher and doctor to the Pharaoh Zoser, is arguably the earliest physician known to us. Imhotep helped to develop a sound body of medical knowledge, and was instrumental in building the first recorded systemised hospital and temple at Karnak, which was patronized by thousands seeking cures for their physical and psychological ailments. Later he became recognised variously as the God of Healing or the Universal God of Medicine. Imouthes is the Greek name of Imhotep (www.britannica.com/seo/imhotep).

Closer to home, we know that historically African Traditional healers were predominant in treating illnesses amongst the indigenous communities. Available information indicates that these healers commanded surgical and medical expertise which was often more advanced than that of the European settlers. We also know that a number of surgical techniques - bone setting, excision of tumours, abscess drainage, skull trepanning, and Caesarian section - were practiced with apparently extraordinary skill. Many of these procedures were beyond the capacity of their European contemporaries. Interestingly, fever was reportedly treated with cupping. Furthermore, the psychological origins of certain diseases were identified (Van Rensburg et al, 1992).

For more than two centuries, Western colonial culture and diverse indigenous African cultures co-existed, although sharp differences undeniably existed between them. Indeed, the colonial settlers learned to use African folk remedies in the treatment of their own maladies, and as a result a number of remedies became incorporated into the Afrikaaner ‘boereraad’ and ‘middels’.

The Afrikaner 'boereraad' system was based on the traditional healing system of Europe and was introduced with the advent of colonialism that was imposed into Southern Africa in the 17th Century and later. It emerged in the 1700s among the Boers who had settled beyond the Boland Mountains as a way of becoming self-reliant and independent of local medical assistance (South African Encyclopaedia, 1975). The medicinal value of many up-country herbs and other plants were soon realized, and more veld medicines and remedies, which actually originated in the traditions of the Khoikhoi, were used (Van Rensburg et al, 1992). By the mid-1800s, over 100 different species of indigenous plants were regularly used by Boers and the coloured community as home remedies ('middels'). Patent or Dutch medicines were also a well established part of the range of Afrikaaner folk remedies. As a rule these were prepared by apothecaries in Cape Town. However, the rapid advances of modern drug therapy have rendered most of these traditional pharmaceutical and folk remedies virtually obsolete (South African Encyclopaedia, 1975).

Before colonialism, the health needs of the African continent were adequately catered for by African Traditional healers. It has been argued that it was colonialism that unleashed serious health problems in Africa. As Bah states:

> …the colonial period… unleashed serious health problems in Africa…Similarly, in South Africa, the major health problems came after colonialism. Before Europeans came to South Africa, syphilis was unknown among Africans. The Zulus had no specific name for the disease other than *isifo sabelungu* (disease of white men) or *isifo sedolopi* (disease of the town) (Bah, 2003: 63).

This period laid foundations for the parallel existence of at least two divergent medical or healthcare systems: Western medicine (professional, scientific orientation) and African Traditional medicine (magico-religious orientation) (Gilbert et al, 1998). This split structure operates even today. The net result of this process was that the Western orthodox medical system became official and generally accepted, whereas African Traditional medicine, in Burrows' review of the history of medicine in South Africa, became non-official, and marginalised (Burrows, 1958).

Philosophy of African Traditional medicine

Traditional (or indigenous) knowledge is that which is:

> … held and used by people who identify themselves as indigenous of a place based on a combination of cultural distinctiveness and prior territorial occupancy relative to a more

> recently arrived population with its own distinct and subsequently dominant culture (Hoppers, 2003:7).

In general terms, African Traditional medicine is the totality of knowledge and practices of diagnosis and treatment for physical, mental or social problems, which is closely allied to traditional religion (Lee, 1995). It is applied to the diagnosis, prevention or elimination of a physical, mental or social disequilibrium and which relies exclusively on past experience and observation handed down from generation to generation, verbally or in writing.

In the African Traditional medical perspective of health and disease, there is a focus on harmony or balance between cosmic life forces. Numerous influences operate, including the energy and power of ancestral spirits and those of the priests and traditional healers. There is a well established hierarchy, from the supreme spirit, through ancestral spirits, to humans, then animals, plants and objects.

In attempting to understand the nature of traditional healing in South Africa, it may help to place it within a wider framework. The ideas and practices associated with traditional healing are not bizarre, but are part of a wider system of concepts that underlies and reflects perceptions of the world and of humanity's place in it. This cognitive system is usually referred to as a cosmology, or world-view (Hammond-Tooke, 1989; Lazarus, 2004).

Aetiology in African Traditional medicine

The concept of disease in African Traditional medicine differs markedly from that of orthodox bio-medicine, as ill-health is considered to arise from internal discord or breakdown of harmony within the body, leading to the malfunctioning of an organ. In fact, the Xhosa word for health - *mpilo* - means harmony with the cosmic force. Disease is regarded holistically, so the organic and psychological components of disease are considered simultaneously (Sindiga et al, 1995).

Within this framework there is less control over natural processes and the clinical situation; there is a substantial degree of fatalism towards a superior force, and importance attached to what happens both before and afterwards. It is accepted that most diseases can be caused in a number of simple ways. For example, it is accepted that infection exists, but the infective agent remains a mystery. As Van Rensburg notes: "Ordinary disease can be caused in a number of simple ways. It is accepted that infection exists, but the infective agent is a mystery. Most diseases are attributed to malfunctioning of an organ." (Van Rensburg et al, 1992: 326).

Besides natural factors, however, supernatural forces (white and black magic) ancestral spirits, taboos, transgression of kinship and religious failure are often regarded as the cause of a particular disease.

> Disease is not merely something from malfunctioning in this or that organ, or a lesion therein…but essentially of a rupture of life's harmony, to be imputed either to a material cause instinct with some "intangible force" or directly to that intangible force itself. It is… necessary in traditional medical practice to confront the symptomatology and aetiology of diseases not only in the material but also in the immaterial world (Ampofo & Johnson-Romauld, 1987: 40).

Even today, many diseases cannot be convincingly explained by orthodox bio-medicine. For instance, the question of why some people, but not others, suffer a particular disease cannot be answered unequivocally by orthodox science. Van Rensburg and colleagues pointed out that:

> Whereas most white patients accept that TB [tuberculosis] is caused by the TB bacillus, a black patient … will not accept this explanation, even if … were to see it under a microscope, or acknowledge its existence. It would still not explain why the bacillus is active now, or why it is in his lungs, and not someone else's (Van Rensburg et al, 1992: 327).

The concept of randomness or chance is not acceptable to the practitioner of African Traditional medicine, and this has been noted by Van Rensburg and colleagues:

> Two important behavioural implications - fatalism towards superior force and importance to what happens before, and what happens afterwards. Concept of disease differs markedly from orthodox. There is less control over nature and [the clinical] situation (Van Rensburg et al, 1992: 325).

An important link which connects African Traditional medicine with the humoral theory of Hippocrates is the basic role of body humours in the maintenance of health or in the development of disease. "Blood is an important concept in medical theory in much the same way as the Humour formed a basic component of the early western medical thinking - the state of blood is believed to be the cause of most illnesses." (Hammond-Tooke, 1989: 55).

Treatment and Diagnosis

Treatment consists of restoring harmony within body, and with the environment. It is considered that structure and function are intimately linked to the social environment, and even to the whole cosmos. Treatment means restoration of harmony within the body, and between body and

environment. It involves dietary changes, herbal medication, behavioural changes, and religious rituals. It is a functional adaptation to immediate circumstances (Sindiga et al, 1995).

Types of African Traditional healers

The traditional healer is defined by the World Health Organisation as:

> Someone who is recognised by the community as being competent to provide healthcare by using vegetable, animal or mineral substances and certain other methods based on the social, cultural, and religious background, as well as the prevailing knowledge attitudes and beliefs regarding physical, mental, and social well-being and the causation of disease and disability in the community (Oyebola 1986: 224).

There are several types of traditional healers: *diviners* (mainly concerned with diagnosis, and variously called sangoma, amagqira, or ngaka); *herbalists* (mainly concerned with therapy, and known as inyanga, amaxhwele, or ngaka); and *faith healers* (basically a combined diagnostician and therapist, called umthandazi or moprofeta) (Van Rensburg et al, 1992).

A major outcome for all medical systems is the satisfaction or otherwise of the patient. When this criterion is applied to African Traditional medicine, then, as was noted by Simons many years ago: "…the traditional healer's combination of magical and empirical remedies …continues to bring comfort and some relief to many, perhaps most, Africans" (Simons 1957: 85). Understandably, therefore, traditional medicine in South Africa can claim widespread use, with highly respected practitioners who are knowledgeable and bestowed with considerable status, and who largely understand the patient base (Van Rensburg et al, 1992).

Appropriateness of African Traditional medicine in South Africa

African Traditional medicine is appropriate in this country for a number of reasons. Not only does it fulfil the four major criteria for a viable medical system, namely accessibility, availability, acceptability, and dependability, but it is perceived as being affordable to the vast majority of its devotees. Moreover, it is community-based, with its own recognised and trusted healers: "People nurtured in a fatalistic culture tend to prefer traditional advisors and healers who hold similar views" (Van Rensburg et al, 1992: 325). This is important, as Twaddle and Hessler observe: "Healers who lose sight of this are in danger of fixing the disease, but neglecting the patient" (Twaddle & Hessler, 1987: 37).

Traditional African medicine is often used as 'port of first call' by people with ailments, who move onto orthodox or natural medical practitioners in the event of dissatisfaction with treatment. Finally, it is perceived as being an integral part of the local culture.

All indications are that African Traditional medicine will remain acceptable to its clientele. It is an open system, is particularly flexible and is continually able to incorporate new elements. It can be safely predicted that the application of African Traditional medicine in the South African healthcare scenario will be maintained for the foreseeable future because of both its appropriateness and its broad distribution in South Africa.

The legal status (formalization) of African Traditional medicine in South Africa

The unstructured nature of training as well as the lack of control on Traditional Healers is perhaps the major challenge that African Traditional healing confronts. However, with the proposed promulgation of the Traditional Healers Bill (www.gov.za/bills) appropriate structures may be put in place over the next decade which should allow for more integration into the public sector.

2.3.3. Complementary medical systems

Most complementary medicine is largely tradition based and empirical, and results from centuries of observation, practice and experience. It can be subdivided into four distinct sections (Lee, 1995):

(1) Diagnostic techniques – these include practices such as hair analysis, iridology, and examination of the tongue and pulse.

(2) Self-help programmes – these seek to improve the patient's general state of health, and include esoteric diets, special breathing exercises, yoga, various relaxation programmes, and spiritual exercises such as meditation.

(3) Complementary treatment modalities – these are often used in conjunction with orthodox bio-medical clinical practice, and include aromatherapy, massage therapy, hydrotherapy, and acupuncture or acupressure.

(4) Philosophy-based healing systems – these comprise a range of disciplines which provide a philosophy of health and illness, theories of disease, diagnostic procedures, clinical examination, and a distinct therapeutic approach. Included in this category are Ayurvedic

medicine, Naturopathy, Homoeopathy and Chinese medicine. Unani-Tibb belongs to this category. Practitioners of these disciplines generally abide by an established code of ethics, and have undergone a well-developed training scheme.

A number of the philosophy-based healing systems are detailed below:

Ayurvedic medicine

This holistic system of medicine is predominant in India where it arose, and is becoming increasingly popular elsewhere. The name 'Ayurveda' is Sanskrit, and derived from *ayur,* which means life, and *veda* which means knowledge or science, according to the Dictionary of Alternative Medicine.

Philosophy. In Ayurvedic teaching, all matter in the universe is made up of five elements - *earth, water, air, fire* and *space* - which also constitute the human being. Ayurveda recognises the uniqueness of each individual. The designation of body types is identified according to the dominance of three biological forces *or doshas,* which exist within man and control all physical and mental systems and activities. These are known as *pitta, vata* and *kapha* (Shealy, 1999).

Pitta is associated with the sun, the ultimate energy source. All energy exchanges and biochemical processes, especially the digestive system, are regulated by this. *Vata* is linked to the wind, and controls circulation within the body, the activity of the central nervous system, and neuromuscular action. *Kapha* is associated with the moon, and governs structure, cell growth and the balance of fluid within the body's tissue. The relative proportions of these doshas in a particular individual are decided at the time of his or her conception, and this is maintained throughout life. When all three forces are in harmony, good health prevails.

Disease. Ill-health will manifest when the doshas are out of balance. Pitta imbalance can be brought about by dyspepsia caused, for example, by alcohol abuse and hyperacidity, and negative emotions such as anxiety and grief. Vata imbalance can be caused by imprudent eating habits, irregular sleep patterns, episodes of strong emotion, and physical or mental over-exertion. Kapha imbalance can be caused by a sedentary lifestyle, inappropriate sleeping patterns such as cat-napping and seasonal changes.

When applying the concepts of vata, pitta and kapha, practitioners of Ayurvedic medicine determine their patients' basic energy patterns, in relation to their age and stage in life – childhood, adolescence, maturity, middle age and senescence.

Classification. Although diseases are not treated in isolation, they can be conveniently divided into four principal groups. *Physical disorders* refer to internal conditions arising from inflammation, tissue degeneration, tumours, and interrupted fluid flow. *Natural disorders* refer to the problems surrounding childbirth, growth and development, and the ailments of senescence. They can be treated by involvement in religious activities. The effects of hunger, thirst and fatigue are also included in this group. *Mental disorders* commonly include excessively strong emotions. Therapy involves means such as meditation and counselling. *Accidental disorders* come from physical trauma. Treatment is usually by first aid or surgery. Treatment consists of a balanced approach with medication, diet, and therapeutic practices.

General treatment. Ayurveda's focus on prevention means that people often undergo therapy before actually showing signs and symptoms of specific ailments. This means the patient maintains constant contact with the therapist, who assesses his or her entire lifestyle, including diet, social and marital life, working and domestic conditions, religious beliefs, and personal habits. The therapist will then advise behavioural changes if she or he feels it necessary.

Ayurvedic remedies range from conventional surgery to herbal products and mineral supplements, which are specially prepared for the needs of each individual. The practitioner's objective is to assess the patient's inborn disposition, and to identify any imbalance that is leading to the physical or mental distress (Chopra, 1990).

Specific therapy. This consists of dietary, medicinal, and practical measures (http://indianmedicine.nic.in/html/ayurveda).

- *Dietary therapy* involves food which is prepared with the needs of the patient in mind, as well as the weather, season, and time of day. The patient should eat slowly and chew thoroughly, in a relaxed environment, concentrating on savouring and enjoying the food. In some cases, fasting may be recommended.

- *Medicinal products*. These include natural substances such as herbs, vegetables and minerals. The herbal products should be prepared freshly, or they will lose their potency. Minerals supplements, on the other had, gain potency the longer they are kept. A number of homeopathic and allopathic medicines are also prescribed by Ayurvedic practitioners.

- *Practical aids.* These include breathing exercises, massage, emetics, yoga, aromatherapy, hydrotherapy, and pancha karma techniques.

Homoeopathic medicine

In the early 1800's, Samuel Hahnemann introduced this gentle system (*like disease*) as an alternative to allopathic (*other disease*) or orthodox medical practices. It uses medicines of animal, vegetable and mineral origin, prepared in very special ways. By using natural remedies to boost the body's own healing ability, homoeopathy aims to treat the whole person (Elmiger, 2001; http://indianmedicine.nic.in/html/ homoeopathy).

As yet, there are no homoeopathic hospitals in South Africa, unlike in Britain and other countries. However, orthodox practitioners are increasingly resorting to homoeopathic practice, spurred on by controversy surrounding orthodox drugs, their efficacy and side effects.

Philosophy. Homoeopathy stresses the uniqueness of the individual, and considers that the individual's make-up determines which disorder the person is susceptible to. Homoeopathy is based on the principle that *like cures like*. That is, the treatment of symptoms is achieved by ingestion of a substance in a very minute dose that can cause the same symptoms in a healthy person. The rationale is that the medication ingested will produce the same symptoms and so trigger the body's inherent wisdom, called the *life force,* to respond to the trigger and thus overcome the condition. The closer a remedy imitates a patient's symptoms, the better it promotes healing. Also, the more dilute the preparation, the greater its effect. This principle contrasts with orthodox medicine, which uses medicines which often causes different or opposite symptoms to those of the illness.

Disease. Illness is seen as a sign of disharmony or inner imbalance, and symptoms are the body's way of fighting disease. Therefore, medicines which produce the same symptoms should assist in overcoming the disease. Homoeopathy tries to resolve underlying problems rather than simply deal with particular problems.

General treatment. The patient generally receives specially prepared oral remedies, which are highly diluted forms of natural substances. Homoeopathy pays most attention to symptoms that have the greatest effect on the patient's overall ability to function, especially mental or emotional symptoms. Also, unusual symptoms will receive more attention.

Specific therapy. As treatment is individualized according to the person's make-up, treatment of a particular condition will vary from patient to patient. On the other hand, the same medication may be used to treat different ailments in different people. Also, whereas orthodox medicine will use a sedative to treat insomnia, homoeopaths may use a stimulant, reasoning that exaggerating the symptom temporarily will encourage the body to recognize the disturbance, and then correct it. Another example is the use of a bee venom extract to treat urticaria.

Naturopathic medicine

Naturopathy dates from the early 20th century in the West, but is based on the philosophy of Hippocrates, Galen, and Ibn Sina. As such, it has much in common with Unani-Tibb, both in theory and practice. It regards Nature as the only healing force, and encourages its adherents to live as naturally as possible (http://indianmedicine.nic.in/html/naturopathy). It is not restricted to any particular treatment modality (Lee, 1995). Anecdotal reports suggest it is effective in a wide range of physical and mental disorders.

Philosophy. Disease arises because of a breakdown in the body's normal equilibrium. There are six principles to naturopathy:

(1) First – do no harm – *primum non nocere*. This is one of Hippocrates' basic principles.

(2) Prevent, rather than cure. As far as health is concerned, humans are their own worst enemy.

(3) Nature has innate healing powers (*vis medicatrix naturae*). Cures should work with the body and be as natural as possible.

(4) Adopt a holistic approach. Apply treatment to the whole person. Also, each person is regarded as unique, and is treated individually, according to the physical, biochemical, emotional, and social circumstances.

(5) Treat the causes of a disease, not the symptoms (*tolle causum*). When a person's health breaks down, the underlying cause should be sought and treated, rather than suppress or alleviate the symptoms.

(6) Teach the patient – so he/she can learn how to prevent the disorder.

Disease. Naturopathy considers that disease is caused by violating the laws of nature, and that cure is effected by using the forces of nature. The symptoms of a disease reflect the body's attempt to purify itself, and treatment requires that the body's vital force be enhanced by eliminating toxins from the body. These toxins include orthodox drugs, pesticides and food preservatives.

Classification. The particular disease a person develops may result from viruses, bacteria, allergy, or other outside factors. However, these are of secondary importance to the patient's lack of resistance and immune system weakness.

General treatment. Naturopathy encompasses a wide range of therapies. Firstly, it encourages the elimination of bad habits, specifically overindulgence in food (especially meat) and drink, coffee in excess, drugs, erratic hours, and sexual and social excess. Secondly, it recommends the development of good habits, for instance, proper breathing, physical exercise, better posture, and developing a correct mental attitude. Finally, it advocates new principles of living, by adopting a proper diet, periodic fasting, thinking positively about good health, and avoiding ideas of pain and disease.

Specific therapy. Naturopathy readily resorts to such treatment modalities as special diets, exercise, massage, hydrotherapy, osteopathy, chiropractic, relaxation, breathing and yoga. In addition, it often uses cupping, acupuncture and acupressure, herbal products, physiotherapy, psychotherapy, and homoeopathy.

Chinese Herbal medicine

This medical discipline has been used for around 2500 years to treat a number of physical, mental and emotional conditions. Chinese Herbal medicine is a section of traditional Chinese medicine. In the China region, traditional and orthodox medicine are practiced side by side, and it is accepted that certain ailments are best treated by one or the other (Bullock, 2001).

Philosophy. Traditional Chinese medicine aims to preserve health and prevent illness by relying on the power of *Chi*, which flows through the body in channels called meridians. This power is derived from the food we eat, and the air we breathe. Blood and other body fluids are seen as aspects of Chi.

It is present as a balance of *yin* (cool, relaxing, dark, quiet and interior) and *yang* (warm, energetic, bright and exterior). For good health, these forces must be in balance. All the body's internal organs are subjected to this opposing set of forces. Chi is also present in all the opposites – night and day, hot and cold, dry and moist, growth and decay, and so on. The five elements of our body (wood, fire, earth, metal, and water) also make us at one with the universe.

Disease. Disease is regarded as disharmony within the body. This occurs in the organs (interior) or skin (exterior), has hot or cold features (fever, chills), is full or empty (acute or chronic) and yang or yin (dark and negative, or bright, positive).

Classification. Short-term diseases can be caused by trauma, or by invasion by a pathogen, or wind-heat, which causes fever and flu-like symptoms; bad food, or damp-heat, which brings about intestinal problems, or excessive use of antibiotics, which lock heat into the body. Long-term diseases are due to overwork, emotional problems, and unsuitable diet.

General treatment. In traditional Chinese medicine, acupuncture, diet, massage, and medicinal herbs are all used regularly. There are a variety of different herbal preparations tailored to individual needs, used to treat and prevent illness. Herbal infusions are the mainstay of treatment (Shealy, 1999).

Specific therapy. Treatment is holistic in principle. Chinese Herbal medicine aims to alleviate symptoms and tackle the underlying causes. Great emphasis is placed on finding the underlying cause of the illness. The patient's physical and mental state, as well as lifestyle factors, are taken into account when diagnosing and treating the disorder. In practice, skin diseases, respirator disorders, digestive complaints and gynaecological conditions respond well to Chinese Herbal medicine.

Phytotherapy

Practitioners employ this discipline (also known as medical herbalism) by exploiting the healing potential of a large number of herbs and other plants (Segen, 1998). Until late in the 18th century it was the usual form of medical treatment, and even now it is more widely used throughout the world than any time in history. In fact, Hippocrates utilised the medicinal properties of herbs and other plants to support the patient's healing process, or physis (Lee, 1995). Phytotherapy can be viewed as the precursor of present day orthodox pharmacology, and many powerful drugs in general use

today are derived from herbs - aspirin, ergotamine, codeine, morphine, digoxin, quinine and others. Moreover, plants form the basis of anti-ulcer products (from licorice) and anti-cancer drugs (from yew and periwinkle).

Philosophy. Phytotherapy claims to treat the patient as an individual, with personal strengths, weaknesses and needs, and not as just another medical case history. Its treatment is tailored to specific and varying requirements. There is no automatic repeat prescription.

Disease. Herbal products can be used in their own right, or used to complement other types of healthcare. They can ease pain and inflammation, relax or stimulate organs, act as antidepressants, fight bacteria, and boost the immune system. Herbs are often made up of a large number of biologically active substances.

General treatment. Phytotherapists maintain that their medicines may benefit most people suffering from most kinds of illnesses, including long-standing conditions such as arthritis, migraine and skin disorders. Most products work in the same multitude of ways as do conventional medicines, although more slowly. They are prepared in a variety of ways, and taken either externally (as creams, ointments or poultices) or internally (as tablets, capsules, infusions, tinctures or decoctions).

Specific therapy. Although there are more than 1000 over-the-counter herbal remedies presently available, the main one in South Africa are *garlic* (opposing infections, and other uses; *echinacea* (immune stimulant); *St. John's wort* (lifts depression); *ginkgo biloba* (treating dementias); *aloe vera* (heals wounds); *panax ginseng* (male energy tonic); and *feverfew* (relief of migraine). Although herbal products are widely held to be free from adverse reactions, many can cause side effects if used in the wrong amounts or combinations.

The role of complementary medicine in South African healthcare

Complementary medical practices such as Unani-Tibb, as well as the modalities discussed in the previous pages, have much to offer with respect to the needs of the current health, disease and healing environment. In South Africa, complementary medicine is thought to be more prevalent than orthodox bio-medicine (Lee, 1995). Moreover, the number of people resorting to complementary medicine as a first choice to healing is on the increase, as the cost of orthodox medical treatment rises inexorably, and disillusion with the efficacy of drugs, especially antibiotics, corticosteroids and anti-asthma products (McTaggart, 1996), sets in. Also side effects and

idiosyncratic reactions are invariably associated with orthodox bio-medicine, and this has become more evident with respect to the newer generation medications developed over the last twenty years (Lazerou et al, 1998).

This increasing interest in complementary medicine has developed not only at the patient level, but also at the level of healthcare professionals. This is evident by the increase in healthcare professionals practicing in the complementary field as well as the increase in the use of complementary medicinal products. In fact this increase in complementary medicinal products prompted the Medicines Control Council (MCC) to issue a Complementary Medicines Call Up Notice (Department of Health, Feb 2002, Government Gazette). This notice has made it compulsory for all manufacturers and distributors of complementary medicines to apply for registration of these products. The MCC is currently drawing up guidelines for the evaluation and registration of all complementary medicines in South Africa. The Unani-Tibb medication used in the research project have been submitted for registration to the MCC.

The growing interest in complementary medicine highlights the fact that whilst modern medicine has made significant progress in technology, diagnostics and trauma care, the total needs of patients have not generally been met (Newmarch, 2004). In addition, a growing number of people would like to take responsibility for their own health, a factor which is rarely acknowledged in allopathic therapeutic practice (Root-Bernstein & Root-Bernstein, 2000; McTaggart, 1996).

To summarise, Table 1 (on the next page) compares the different aspects of healthcare in the two medical treatment systems (Van Rensburg et al, 1992):

TABLE 1: COMPARISON OF ORTHODOX BIO-MEDICINE AND COMPLEMENTARY MEDICINE IN A NUMBER OF ASPECTS OF HEALTHCARE

Aspect of healthcare	Orthodox bio-medicine	Complementary medicine
Health	Absence of disease	Balance between opposing forces, internally and externally
Disease/Illness	Specific, locally defined deviations within organs or tissue structures	Body language (symptoms) are indicative of disruptive forces and/or healing processes

Diagnosis	Morphological	Functional
Therapy	Combating destructive forces	Reinforcing constructive forces
The patient	Passive recipient of external solutions	Active participant with a view to regaining health

Although the interest in complementary medicine in Westernised (or quasi-westernised) societies has increased dramatically over the past few years, there has been relatively little serious or in-depth exposure to the theory, practice and benefits of Unani-Tibb. The Ibn Sina Institute of Tibb in South Africa was founded specifically to promote the practice and training of Unani-Tibb, locally and internationally.

2.4. Overview on Unani-Tibb

2.4.1. Introduction

Worldwide, the practice of Unani-Tibb (also termed the Unani System of Medicine or Tibb medicine) is enjoying an upsurge of interest. Unani-Tibb is most prominent in the India, Pakistan and neighbouring countries. In India alone there are 43,000 registered Unani-Tibb practitioners, 312 fully staffed Unani-Tibb hospitals, 958 Unani-Tibb dispensaries, 39 colleges (including 5 offering post-graduate training) a Central Research Institute, 7 Regional Research Institutes, 12 Clinical Research Institutes, and 17 other related Institutes (Government of India, 2001). Research currently undertaken at the Central Council of Research in Unani Medicine (CCRUM) includes clinical studies and therapeutic trials of single and compound formulations, standardisation of medicinal products, clinical pharmacological studies as well as translation of classical Unani manuscripts (Government of India, 2001). Unani-Tibb, therefore, is a major player in the medical treatment of a substantial proportion of the global population.

Unani-Tibb is a total system of healthcare, drawing on the original principles of care which were developed by Ibn Sina (Avicenna) in the late 10^{th} and early 11^{th} century (Gruner, 1929; Hamdard, 1993; Bakhtiar, 1999), which in turn is based on the work of Hippocrates, Galen and other pioneers of healing. In many ways this triumvirate can be regarded as the founders of present day medicine,

as by early in the 18th century, Unani-Tibb was the bedrock of virtually all medical practice in the so-called civilised world (Tobyn, 1997). Most types of complementary medicine flourished in Europe, the Americas and on the Indian sub-continent until early in the 20th century, when chemical or allopathic medicine emerged and began to dominate.

2.4.2. History of the development of Unani-Tibb

A full account of the history of medicine is beyond the scope of this thesis. Mention should be made, however, of the main pioneers of Unani-Tibb, and their valuable contributions to the art and science of healing and prevention of disease. The key philosophers in the origin and development of the principles and practice of Unani-Tibb are Hippocrates, Galen and Avicenna (Chishti, 1991). (Other important contributors in the fields of surgery, ophthalmology, obstetrics, dentistry and public health are not included, as this is outside the scope of this thesis).

Hippocrates

As far as the history of medicine is concerned, the ancient Greeks are generally regarded as the founders of true medicine**.** The origins of Unani-Tibb can be traced back as far as Hippocrates of Cos (469-399 BCE), who is credited with eliminating magic and superstition from medical practice, and introducing new benchmarks of ethical behaviour, clinical observation and therapeutics (Bhikha & Haq, 2000). He regarded the body as a complete, integrated whole, was the originator of the humoral theory and is associated with a collection of medical books, the *Hippocratic Corpus* (Nuland, 1998). These were probably written by his acolytes, as there is no undisputed record of Hippocrates' medical teachings in existence. What we do have regarding his teachings are for the main part anecdotal. His school of medicine laid considerable stress on the need for careful observation of both the physical and mental condition of the patient, and also the effect of the immediate environment. He introduced the concept of case-history, so clinical progress (or otherwise) could be accurately monitored. The purpose of medical care, he reputedly affirmed, was to assist the patient's natural recuperative powers, thereby help him or her reject the disease and restore health. Reliance on the body's self-healing mechanisms was promoted, with external agents – herbal products usually – reserved for difficult or intractable cases (Boussel et al, 1982).

Galen

Galen of Pergamon (131-201 CE), a pioneer, was born six centuries after Hippocrates. In his treatise on simple medicines, he mentions numerous remedies of vegetable origin. In many ways he was in advance of his times, and considered that a medicine could only be effective if the healer knows the patient's constitution, age, and environment, the timing of administration, and the quantity given. Also, he suggested that clinical disorders are cured by the contraries. For example, if a disease is present which is hot and dry in quality, so that the body becomes hotter and drier than normal, the treatment must be cooling and moistening in order to restore the balance. Galen accepted the concept of humours which were produced in the liver and he introduced the theory of temperament. He also elaborated on the temperamental nature of specific foods (Boussel et al, 1982).

He was largely instrumental in returning the practice of medicine to the high standards set by Hippocrates (Rees & Shuter, 1996), especially in the importance of symptom observation, identification and recording. As an author he had a major influence on Arab and Western physicians of the Middle Ages. He wrote many books covering diagnosis and treatment (and many on anatomy, physiology and surgery) most of which have survived (Rees & Shuter, 1996). His writing often revealed a strong spiritual foundation.

The Arabic contribution to Unani-Tibb

After another, 900 year, long period of abysmal ignorance, there was a revival in the theory and practice of medicine, specifically in the Arabic civilisation. One of the first masters of Arab medicine was the polymath *Rhazes*. In his monumental work, *al-Hawi,* he listed the medicinal plants used in his time, and taught the preparation of numerous remedies and ophthalmologic lotions. Other eminent players in the development of pharmacy were Ibn al-Abbas, who dealt with pharmaceutical practice in *Kitab al-Malaki (the Royal Book),* and Abu Harawi, who refers to no less than 585 different remedies (Boussel et al, 1982).

Ibn Sina (Avicenna)

Perhaps better known in the West as *Avicenna* and now revered as the "Prince of Physicians", Ibn Sina (980-1037 CE) was undoubtedly the most prominent of Arabic scholars, and arguably the most famous physician in the history of medicine (Boussel et al, 1982). This Persian polymath was gifted

with a high intelligence, a prodigious memory, and a tremendous work rate. He had time, in his relatively brief life, to write at least 16 books on medicine (and 156 on non-medical subjects such as astronomy and philosophy). Of these, the *Book of Healing* and the *Canon of Medicine (*Bahktiar, 1999*)* are best known.

The *Canon of Medicine* exceeds one million words, and is the most comprehensive and authoritative description of the Greco-Arabic system of medical science known up to the 10th century. It was taught as standard text in European and Middle Eastern universities until the 17th century. The *Canon* not only distilled the essence of medical knowledge inherited from the previous Greek civilisation, but added substantially to it, in the light of subsequent thinking, experience and experimentation. The *Canon* was perhaps the most important influence on European medical thought for more than five centuries. Even today, it is studied by thousands of scholars in both the East and West. It lays out a complete system of medicine based on the work of Galen, but also includes new facts based upon his own experiences. It has five sections: general science, medicines, particular diseases, diseases common to different organs or parts of the body, and a pharmacopoeia. It mentions numerous new medicines for the time. Written originally in Arabic, it has been translated into numerous languages, initially Persian (1295 C.E.), then Urdu (1324 C.E.), and more recently in French and English. The first translation was made by O.Cameron Gruner in 1929. A second English translation was carried out by the Department of Islamic Studies, Jamia Hamdard, New Delhi, India in 1993.

When the centre of gravity of medical practice moved from the Middle East to Al-andalus (Andalusia, in Southern Spain) in the 9th century, a "Golden Age" ensued, in which the development of medical care gathered momentum (Bhikha & Haq, 2000). Amongst the 'towering figures' in therapeutics was *Ibn Juljul* (943 CE) and *Abd Rabbih* (930 CE), who wrote extensively on the subject of pharmaceutical products, including poisons and their antidotes. His pharmacopoeia detailed the myriad of techniques then available for the preparation of numerous dose forms, their storage and use.

But perhaps the most famous figure from this era is *Abbas al-Zahrawi* (939 CE: known in Europe as *Albucasis*). This giant of pharmacy created the first truly scientific medical encyclopaedia, *al-Tasrif*, over 40 years, a veritable "treasure house" of medical, surgical and pharmaceutical information. For

example, one of the 30 treatises of the encyclopaedia deal with definitions, causes and classification of disease, therapeutic procedures, pathology, diagnosis and prognosis.

The European renaissance contributors

Although interest in traditional Indian, Chinese and Tibetan medicine is rapidly increasing in popularity, holistic medicine is not the prerogative of the Eastern region. The Western world has its own form of traditional medicine, which can be traced from the natural philosophy of Ancient Greece through to the 17th century herbalist, apothecary and astrologer, Nicholas Culpeper, a famous practitioner of alternative and holistic medicine. His medicine was the medicine of Hippocrates and Galen, which had been used traditionally throughout Europe for 1400 years.

Culpeper communicated this system of holistic healing to his fellow countrymen (not just learned medics) both by writing original works of his own, and by translating those of the leading medical practitioners from Latin into English. During his lifetime his books were immensely popular, and his popularity continues even today: *Culpeper's Herbal* is still in print after over 300 years (Tobyn, 1997). The main reason for the continuing popularity of *Culpeper's Herbal*, despite the 17th century language style, is that the messages or substances of his words are as relevant now as they were in his time. They are founded on universal principles of health maintenance and healing which are still observed by billions of people, mainly in the so-called developing world.

Culpeper's role is presently being re-evaluated. Rather than the vituperative 'quack' he was regarded by the medical establishment of his day, he is now "a figure of outstanding importance, for he is a far greater influence on medical practice in England … than even Harvey and Sydenham" [the putative discoverer of the circulation of the blood and 'the English Hippocrates' respectively] (Poynter, 1962: 153). His writings reflect faithfully the orthodox medicine of his time, and his translation of the works of the leading European medical writers of his period gave to English speaking doctors for the first time a comprehensive body of medical literature in their own tongue which represented the best contemporary authorities.

Culpeper's philosophy was contrary to that of present day orthodox bio-medicine, which generally treats the mind and body as separate entities, as part of a complex machine, with the focus on fixing what has gone wrong with this machine. He would be more comfortable with the paradigms embodied in many traditional medicine doctrines, in which the emphasis is on the functioning and

interaction of the human mind and body, both with respect to the individual body organs, or their parts, and also with regard to the operation and integrity of the whole being.

Consolidation of Unani-Tibb

The awakening interest in complementary medical practice can be illustrated with Unani-Tibb as an example. One pathway which represents a more traditional approach is provided by Chishti (1991). This book not only synthesises the principles and practices of Hippocratic, Chinese and Unani-Tibb, but also reviews and elaborates upon the teachings of Ibn Sina (Avicenna). An alternative, more modern interpretation is provided by Rolfe (2002), which examines the contrast between orthodox medicine and therapeutic paradigms such as Unani-Tibb. This book complements other publications appearing a decade or so earlier, such as those of Littauer (1986) which reiterates the over-riding importance of the person's unique and individual temperament in the health maintenance / disease alleviation scenario. A more recent indication of this awakening interest is the review of temperament and disease (Glynn, 2003).

The importance of diet shows how relevant are today the principles of holistic medicine as advocated in the past. Recent reports (Newman Turner, 1996; Holford, 1998) suggest that advances in the understanding of the effects of free radicals on the body has encouraged the health-conscious trends of anti-oxidant therapy and the increased consumption of fresh fruit and vegetables. This may lend more credibility to toxaemia theories in alternative medicine, and to the restoration and promotion of eliminative techniques such as cupping, enemas, fasting, food selection and detoxification.

2.4.3. Philosophical principles of Unani-Tibb

The philosophical basis of medicine in Unani-Tibb is consistent with most traditional systems of medicine, which themselves are in keeping with the concept of a holistic 'worldview'. This recognises that humans are part and parcel of the universe, interacting at numerous levels. Not only is the human being (as the *microcosm*) made up of the same matter as everything else in the universe (*macrocosm*) but everything in the universe is interconnected. This worldview recognises not only the relationship between the macrocosm and microcosm but also the presence and role of a Supreme Wisdom that controls and orchestrates every action and reaction (Lazarus, 2004).

The Unani-Tibb philosophy has been developed over thousands of years. It originated with the philosophical insights of ancient Greeks such as Aristotle, Plato and Democrates, and gained momentum with the Arab era. The knowledge of the basic sciences that underpin medicine, such as chemistry, physics, anatomy, physiology and biochemistry were all understood and interrelated to the realm of metaphysics, astrology and theology.

This knowledge base, which developed over thousands of years, encompassed the creation of matter, creation of the universe, the creation of mankind, the nature of mankind, and the relationship between mankind and the environment. With respect to medicine, this knowledge base provided clear insights into the state of health, the various causes of health and disease, the pathological processes which lead to diseases, and the treatment of clinical disorders.

The main concepts emanating from the philosophy of Unani-Tibb, with respect to healthcare, are the relationship between the macrocosm and the microcosm, as well as the recognition of a Supreme Wisdom.

Microcosm and macrocosm

The relationship between an individual and the environment is an important consideration in Unani-Tibb. Hippocrates posited that life requires a reciprocal association between the organism and the environment, and that disease arises from a disruption of this harmonious relationship. We, as individual human beings, are connected to the environment in many ways: via our behaviour in our families, our communities, our societies, our activity on the planet, and our very existence.

Everything we do has repercussions far removed from ourselves. We connect with the macrocosm by our behaviour, our actions, the air that we breathe, and exert an influence on all living organisms which share our common environment.

This concept, of the relationship between an individual and his or her environment, was originated at a time in human development when there was little in the way of scientific equipment or other resources, and when simple observation, intuition and deductive reasoning were often the only investigative tools available. Interestingly, this concept has recently come under scrutiny by cosmologists and nuclear physicists, with considerable controversy surrounding arcane matters such as gravitation waves, the anthropic principle, string theory and universal constants (Bryson, 2003).

Central to the recognition of the relationship between the macrocosm and the microcosm is the fact that there exists a Supreme Wisdom which orchestrates and maintains a harmonious balance, whether at the cosmic, geological, social or physiological level. The relationship between fauna and flora, humans and animals, the atmosphere, the oceans, and the earth are all carefully and delicately balanced for the perpetuation of life.

This harmonious balance is guided by an organising principle, the *Supreme Wisdom of the Universe,* the essence of which exists in every living entity. This inherent wisdom resides in our genetic make up. Hippocrates called this wisdom 'Vis Medicatrix Natura' – the inherent wisdom of the body to heal itself. Unani-Tibb calls this 'Physis'.

Physis

The concept of self healing is recognised in several medical philosophies and disciplines, such as Chinese Herbal Medicine, Ayurvedic Medicine, Naturopathy and Homoeopathy. It is also an important component of the worldview of a number of indigenous peoples, such as the Native Americans (Lazarus, 2004).

Physis is essentially the intrinsic ability of the body to preserve health and heal itself (Bhikha & Mohamed, 2004). As Hakim Chishti states "a cut does not heal because of the stitches or antiseptic cream, it is the skin of the body that performs the miracle" (Chishti,1991: 11).

Hippocrates is justly famous as the originator of the humoral theory. Less well known, however, is his medical paradigm that describes the relationship between physis and the external environment. Fundamental to this was the concept of the body as a complex, integrated and holistic system which interacted continuously with the external environment. In particular, he considered that the body extracts from the external environment what it needs and can use, and returns what it does not need or cannot use. This environment is described in terms of the person's lifestyle or governing factors, which include air and breathing, food and drink, movement and rest, emotions, sleep and elimination.

His therapeutic attitude, therefore, was based on a general approach to the diseased person, in addressing this external environment rather than a specific treatment against a range of symptoms. He relied heavily on supporting the body's intrinsic self-healing mechanisms to deal with the illness, rather than routinely introducing external agents.

This concept of physis was later developed by Ibn Sina and other physicians. Physis is the organising principle of the body, which initiates, regulates and co-ordinates all the activities in the body, from the lowest level of the cell, to the highest level of the whole organism (Bhikha & Haq, 2000). It acts to maintain internal equilibrium in the body, or *homeostasis*. In the ideal state of health, physis exhibits dynamic optimum functioning.

Physis ensures that an ideal balance exists within the body's cells, in the tissues, between the many internal organs, and the entire body. This dynamic maintenance of harmony within the body is also termed *homeostasis*. Physis comes into effect from the instant of fertilisation, and is present until the moment of death. It maintains harmony between the individual and both the internal and the external environments.

In the *physical context*, physis ensures that the millions of biochemical reactions – for growth, tissue maintenance, reproduction and repair – which are taking place at any instant, are controlled. Physis is effectively the administrator of the body, operating in the physical, psychological and spiritual dimensions. Many concepts of spiritual healing, psycho-neuroimmunology (PNI) and self-help programmes have a direct influence on triggering a positive response on physis, as described in *Spontaneous Healing* (Weil, 1997).

The word "physician" is derived ultimately from the term physis. According to Unani-Tibb, the role of the physician or healthcare worker is to actively assist physis in the healing process, using accurate diagnosis based on the patient's symptoms and signs (taking into account the governing factors affecting the patient) and plan and execute treatment accordingly. To put this succinctly: treatment comes from outside; healing from within.

An important aspect of physis with respect to Unani-Tibb philosophy is the spiritual component, which, according to this philosophy, serves to activate physis. However, elaboration on this aspect is beyond the scope of this thesis and will therefore not be discussed in greater detail.

Fundamental concepts in Unani-Tibb

There are two aspects to Unani-Tibb – theory and practice. Regarding theory itself, there are three components (Chishti, 1991):
(1) *The theory of naturals*, which deals with the subjects of the elements, humours, temperaments, organs, energies, faculties and functions.

(2) *The theory of cause and effect*, which examines the reasons why deviations from the normal healthy state of harmony within the body occurs. This embraces the governing factors, and how they can be corrected when distorted.
(3) *The theory of signs*, which is mainly concerned with the diagnosis of the clinical disorder, and identification of the deviations from which it arises.

(1) The theory of naturals

The theory of naturals is also termed the constitution of the human being, as it describes the seven components which make up the human being. These are: (a) the elements or primary matter; (b) humours; (c) temperament; (d) organs; (e) energies; (f) faculties; and (g) functions.

Elements

The discussion on elements (or *primary matter*) includes the concept of creation. Without the technology that is available today, the ancient Greek philosophers were unable to measure the relationships between energy and matter. However, within the scope of understanding of physics and metaphysics, they hypothesised that everything in the universe existed either as energy or matter. Between this transition of energy and matter, there exist four elements or primary matter. These four elements are symbolically represented by earth, water, fire and air (Chishti, 1991).

Each element has a fixed combination of the universal qualities heat, coldness, moistness and dryness. Earth is cold and dry, and is solid; water is cold and moist, and is liquid; air is hot and moist, and is gaseous; and fire is hot and dry, and is plasma-like. According to Ibn Sina, the elements are simple indivisible matters, which provide the primary components for everything in the universe, including the human body. The existence of various substances (compounds) in nature depends on their combinations.

Depending on the ratio of this primary matter, everything in the universe exists either in the form of a solid, liquid, gaseous or phlogistic (plasmatic) state. For example, a compound that is in a liquid state will have a greater concentration of the “water” primary matter. Also, a compound that is in a solid state will have more of the “earth” primary matter.

Depending on the ratio of the qualities associated with this ratio of primary matter, these qualities combine in a state of equilibrium resulting in an overall quality for this compound. This overall quality in a state of equilibrium is termed 'temperament'.

Temperament

Temperament is the quality that results from the interaction of the four primary qualities: heat, coldness, dryness and moistness (Bhikha & Haq, 2000). When these qualities are combined, the resultant new quality maintains a state of equilibrium. Temperament also describes the patterns of relationships or ratios of constituent primary matter that exists on every level of organisation, thereby enabling successive levels of complexity to emerge. The term temperament can also be extended to include the concept of the state of equilibrium or homeostasis in a cell, a tissue, an organ, or the entire body, or even the personality of an individual, upon which life at that level of organisation, be it cell or body, depends (Ahmed, 1980).

Every level of creation of matter has a specific temperament, be it the atoms that make up elements, or organic and inorganic compounds that variously make up carbohydrates, proteins, fats and minerals, or the organs and tissues that make up the structures (compounds) of animals and human beings (Azmi, 1995). The concept of creation also recognizes that the human body has been created to perfection in terms of its structure and temperament to perform specific functions (Yahya, 2001).

For centuries, philosophers, scientists and artists have examined the basis of human personalities, and tried to determine why human nature can encompass such limitless variety of thought, emotion and action. Numerous systems have been devised over the last decades which claim to describe, label and measure the human personality in great detail (Littauer, 1986; Rolfe, 2002). We have many systems, usually involving lengthy questionnaires, which are commonly used in personnel selection and development, sales and negotiation techniques, motivation programmes, heart risk types, and many other areas.

However, our understanding of how personalities arise, or why people differ so much, has not moved much beyond those of the Greek physician, Galen (Kagan, 1994). He proposed that personality reflects different mixtures (*admixtures*) of the body's four humours. These combinations gave rise to the four basic temperaments: sanguinous is characterized by being hot and moist; phlegmatic which is typically cold and moist; bilious which is regarded as hot and dry; and

melancholic which has cold and dry qualities. The four temperaments are our uniquely human way of expressing the balance of the four forces that govern all things according to the traditional way of understanding character and maintaining health.

Although the concept of temperament is several centuries old, it has endured. In addition, temperament can claim a major advantage over many of the more recent profiling techniques: it includes a measure of physiological parameters. Temperament, in fact, combines both psychological profile and physical constitution. This is particularly valuable as there are proven links between physical characteristics and the psychological state.

In more recent times, Carl Gustav Jung (Shealy, 1999) described the four basic archetypes, which correspond closely to the four dominant temperaments: (a) the sensing extrovert (equivalent to the sanguine); (b) the intuitive extrovert (equivalent to choleric/bilious); (c) the sensing introvert (equivalent to phlegmatic); and (d) the intuitive introvert (equivalent to melancholic). Also, recent studies on the biochemical nature of human tissues, especially blood, reveal a tremendous range of profiles, that could possibly relate to the myriad of temperaments which characterise the human being. In fact, recent studies (Lawton, 2003) of personality formation, endocrine activities, metabolic processes, developmental patterns and family history do not contradict the existence of the four basic temperaments. There is increasing evidence to affirm the reality of these four humoral forces. In dynamic harmony they co-operate together, encouraging health and harmony, whereas when out of balance they lead on to disease and disharmony.

Humours

One of the fundamentals of Unani-Tibb is the humoral theory. As mentioned earlier, the theory of four humours came from the Hippocratic School of Medicine. This embraces the patho-physiology of a particular illness, the diagnostic principles invoked, and the therapeutic approaches adopted in the healing process. This core concept was originated by Hippocrates, expanded by Galen, and formalised by Ibn Sina and his medical contemporaries, who completed the final classification, codification and application of Unani-Tibb (Bakhtiar, 1999).

These humours are manufactured from the digestion of food and drink which are processed and transformed in the liver. Every level in the body – from simple cells, to tissues, to organs, to the whole body – is infused with these humours. Humours exist at the vascular level, the intercellular

level, and up to the point that they permeate the cell. Humours provide the nutrition and energy for the maintenance of the cells and tissues in the body.

There are four humours, symbolised as (a) sanguinous (with qualities of hot and moist); (b) phlegmatic (with qualities of cold and moist); (c) bilious (with qualities of hot and dry); (d) melancholic (with qualities of cold and dry). The four humours with their associated qualities of heat, coldness, moistness and dryness are responsible for the maintenance of the ideal qualitative state required at different levels of the body. That is, at the cellular level, in tissue and in organs, as well as in the overall temperament of the individual.

From a practical perspective, health will only be maintained as long as the overall quality of the humours is in harmony with the overall quality of the temperament of the individual. Humours also provide energy for the faculties to perform the various functions of the body. Every person has a distinct and unique balance of humours, although one particular humour will be dominant. The person's diet, plus the effects of the environment, will have a profound dynamic effect on the humour composition in the body.

The body has a natural tendency to restore balance in humours, but minor imbalances in humours cause discomfort, and major imbalances result in illness. A chronic clinical disorder is usually due to disturbance of the dominant humour, and this imbalance can be corrected to support all humours. An acute disorder, however, requires rapid adjustment to restore internal balance. An awareness of how the humours operate empowers the physician to avoid damaging health, and embrace health giving solutions.

In more recent times, Jung and others have been fascinated by the humours and their link to health and the role of the spiritual or divine in healing on one hand, and the intellectual insights by rational and scientific enquiry on the other (Lawton, 2003).

The three main organ theory in Unani-Tibb

The three main organ theory of Unani-Tibb provides the basis for understanding the extremely complex dynamic interplay that exists within the human body. This theory applies at the basic cellular and tissue level (Jamia Hamdard, 1993). It also applies when body organs and organ systems are involved, and ultimately to the relationships between the body, mind and spirit.

The main organs are considered to be the heart, the brain, and the liver. Interestingly, these organs correlate with embryology in modern medicine with respect to the endoderm, mesoderm and the ectoderm in the developing embryo. These organs are composed of several tissues. The heart is predominantly made up of muscular tissue and has the vital function of controlling the cardiovascular and respiratory system. It has an overall temperament of dryness. The brain is composed mainly of nervous tissue. It has a psychic function controlling the nervous system and its accessory structures, and has an overall temperament of moistness. The liver is mainly secretory (epithelial tissue) in structure, and has a metabolic function controlling the digestive, excretory and reproductive system. It has an overall temperament of heat. The three main organ theory and the qualities associated with these organs allows for an understanding of the pathological changes that can develop within the body as part of the disease process.

Energies, faculties and functions

The humours/body fluids are the source of energy which is produced by oxidative respiration – from the interaction between the oxygen inhaled and the subsequent conversion of glucose into adenosine tri-phosphate (ATP). The faculties of the body will continue their functions as long as adequate energy, as ATP, remains available to the respective organs. There are three main faculties associated with each of the main organs that are responsible for the efficient functioning of the body (Chishti, 1991).

The *vital faculty*, the seat of which is the heart, controls muscular tissues that uses mechanical energy to transport nutrients and enables movement throughout the body. The vital faculty regulates the immune system and has an overall temperament of dryness.

The *metabolic faculty*, the seat of which is the liver, controls the epithelial tissue that uses bio-chemical energy and provides nutrition to the body. The metabolic faculty regulates the endocrine system; and has an overall temperament of heat.

The *psychic faculty*, the seat of which is the brain, controls the nervous tissue using electrical energy to coordinate the intellectual, sensory and motor functions of the body. The psychic faculty regulates the nervous system and has an overall temperament of moistness.

It is interesting that modern medicine acknowledges that the body contains three self regulatory systems that are capable of sophisticated feedback processes and learning (Nuland, 1998). They are

the immune system, the endocrine system and the nervous system. All three of these systems are pattern recognition systems that can be said to learn through feedback, communicate information and store information as memory.

(2) The theory of cause and effect

This is one of the greatest strengths of Unani-Tibb. This is due partly to the fact that the root of an illness is addressed, as opposed to the symptomatic approach usually adopted by orthodox bio-medicine, and partly because it seeks a comprehensive understanding of the causes of the illnesses, based upon improved diagnostic skills and so resulting in effective treatment.

In Unani-Tibb, the concept of cause relates to the aetiology from which originates the existence or outcome of a certain state of the human body, be it a state of health or disease. Ibn Sina describes three conditions for a cause to produce an effect (Bakhtiar, 1999). These conditions are that (a) the cause must have sufficient active power to produce an effect; (b) there must be a sufficient receptive component for the cause to have an effect and (c) there has to be an appropriate period of contact between the active power and the receptive component. He further elaborated on four kinds of causes: (a) those associated with the humours/body fluids; (b) those associated with the temperament; (c) those associated with the governing/lifestyle factors; or (d) those associated with the functions of the body. These principles of cause and effect provide valuable insights to the understanding of all the pathological processes that take place within the body.

In Unani-Tibb, the concept of a single cause of a disease, whether it is a microbe, toxin or any other factor is not accepted as being plausible. Common sense and logic stress that every morbid condition is the result of many factors, occurring in combination, either sequentially or simultaneously. Although the existence of pathogenic organisms is accepted, Unani-Tibb claims that it is the original imbalance in temperament which provides an altered biotic environment in the living tissue in which bacteria, viruses and other microbes can thrive (Chishti, 1991). This growth of microbes in the internal milieu provokes a reaction from physis on the affected tissues; this reaction often manifests as symptoms of infection if the disease state becomes established.

Unani-Tibb challenges the idea of germs or other factors as being the primary cause of disease. It accepts that they do have a role in the onset of disease, but that the patient's temperament has a major role to play in the patient succumbing to the disease. Not everyone gets colds and flu, or skin disorders. In support, a recent survey (Hogan, 2003) has revealed that although many women are

infected with the human papilloma virus, which orthodox medicine considers responsible for cervical cancer, only a tiny proportion ever develop tumours. Their susceptibility to the various factors which conspire together in inducing the disease is determined by the person's temperament at that particular time.

The presence of bacteria can be reduced markedly by antibiotics, so providing a temporary cure, but if the temperamental imbalance is not properly addressed, the infection will recur, because the body's immune system is not able to deal with the remaining infectious agents. For example – the common cold and bronchitis is notoriously prone to regular recurrence, as is vaginal thrush.

The cause of the initial imbalance in temperament can usually be found in the governing factors – the patterns of existence and behaviour that influence us all (Bakhtiar, 1999). These include our breathing activities, the food and drink we consume, our rest and activity spectra, life stresses and emotional situation, and kidney and bowel functions.

(3) The theory of signs

Unani-Tibb accepts that there are physical, mental, emotional, and even spiritual components to both health and illness (Chishti, 1991). It considers our health to be the result of a natural, harmonious balance, believes that our bodies have a way of finding the path back to health, and that healing comes from within. Recognition of this inherent wisdom to self healing is essential in the treatment of disease and maintenance of health (Bhikha & Haq, 2000).

In practice, Unani-Tibb includes the basic principles of modern clinical science, and is not inconsistent in both theory and application. It promotes the early diagnosis of possible inclinations or pre-dispositions to diseases, well before physical symptoms appear, thus preventing these diseases from appearing later in a more severe form (Bhikha & Haq, 2000). Thereafter, treatment is integrative – combining various therapies in response to the patient's specific needs. The theory behind the signs and symptoms refers to three factors: (a) the relationship between the individual and his or her unique temperament; (b) the qualitative influences of the interaction between the individual and the environment; and (c) and the role of Physis in the maintenance of health (Bhikha & Haq, 2000).

Physis, temperament and disease

Understandably, the myriad of complex processes that characterise living tissue, which normally work in harmonious co-operation, are not free from disorders. In most cases however, the intrinsic healing mechanisms located in the tissues or organs quickly act to restore harmony. For example, the vast majority of cancers which develop at the cellular level are eliminated almost as quickly as they arise (Braunwald, Isselbacher, Petersdorf, Wilson, Martin & Fauci, 1987). However, if disturbed processes in the living tissue cannot be rectified by physis, then a disease will develop.

In the early 19th century, the description of diseases changed dramatically, moving from symptom complexes, to measuring signs of organ lesions, or describing a disturbance in the function of an organ. For example, the term cerebro-vascular disorder replaced stroke, and kidney failure replaced dropsy or oedema. Later still, towards the end of the 19th century, the advent of the science of microbiology gave rise to the notion of the aetiological origin of disease. This meant that the disease could be regarded as being caused by a particular tissue or organ malfunction or by certain bacteria, viruses, fungi, or other micro-organisms.

2.4.4. Management of clinical disorders in Unani-Tibb

Background

The practical application of the philosophical and theoretical aspects of Unani-Tibb to the management of clinical disorders is highly relevant to the thesis. From the above discussion on primary matter, humours, organs as well as the total human being, we observe the commonalities of the qualities of heat, coldness, moistness and dryness. The practical implementation of the theoretical principles therefore centres round the effects of these qualities. The assessment of signs and symptoms in the diagnosis, the pathological processes that accompany the illness conditions, as well as the application of treatment, are all viewed within the concept of qualities. These interpretations are made in the context of both the human body, as well as in relationship to the environment and in keeping with the laws of Nature.

Diagnosis in Unani-Tibb

Diagnosis is carried out using readily available modern techniques such as blood tests, blood sugar, urine analysis, ultrasound, and radiological methods. In addition to these techniques, the traditional pulse, urine and stool analysis is also resorted to in diagnosis (Chishti, 1991). However, particular emphasis is placed on evaluating the presenting signs and symptoms of the patient, and substantial care taken in compiling detailed personal and family medical histories. The protocol of diagnosis is designed to identify the diseased condition of the patient as well as the imbalance in the temperament and humours.

Treatment with Unani-Tibb

Therapy in Unani-Tibb is based on the understanding that a particular illness has developed in the patient due to a disharmony in his or her temperament, which has deviated from the ideal (Bakhtiar,1999; Bhikha & Haq, 2000). Treatment is therefore aimed directly at restoring balance to the patient's temperament or humours. An important thrust of Unani-Tibb therapy is the elimination of toxins from the body, by one or more of a number of established therapies. Treatment methods include the use of accepted medication, the application of appropriate surgical procedures, and the practice of regimental therapies. It also involves extensive critical examination and possible modification of lifestyle factors.

Unani-Tibb adopts a multi-disciplinary approach to healing the patient (http://indianmedicine.nic.in/html/unani).Within this context the main treatment modalities include:

(1) Pharmacotherapy. This entails the appropriate use of natural, proven and accepted medication, usually based on herbal formulae, which has been established over many centuries.

(2) Regimental therapy. These therapies embrace a number of interventions aimed at the removal of toxins from the body. These include purgation, emesis, diuresis and, particularly important, the art of cupping.

(3) Counselling – patient advocacy, health education and empowerment.

(4) Minor surgery – by trained practitioners.

(5) Application of the governing/lifestyle factors. Unani-Tibb practitioners consider six behavioural and environmental factors to be of primary importance in matters relating to the treatment of disease and the maintenance of health (Chishti, 1991).

Governing or lifestyle factors applied in the treatment of illnesses

(a) *Atmospheric air.* The quality, nature, pollutant and toxin load of the air that one breathes, and the effect of seasonal and geographic changes are important aspects to consider with regards to the cause as well as treatment of illnesses. Unani-Tibb considers these factors as paramount in determining the individual's health status (Bakhtiar, 1999)

(b) *Diet.* Unani-Tibb places great emphasis upon food and beverage intake, as it considers that most ailments arise primarily from long-term errors in dietary composition and eating practice (Lee, 1995). The rationale of Unani-Tibb dietotherapy is based on the temperament of the patient, the qualities of the food recommended for consumption or avoidance, and the nature of the clinical disorder presently affecting the person.
The digestive process itself - digestion, assimilation and residue expulsion - also comes under scrutiny. Dietotherapy involves a programme of dietary modification, in order to address the underlying disequilibrium in temperament. The consumption of specific foods is encouraged, and the omission of deleterious foods discouraged. This programme is exemplified in the recently published book on dietary options for different clinical ailments and temperamental make-up (Vallee & Bhikha, 2003).

(c) *Movement and rest.* Physical exercise is now generally regarded as an important contributor to good health of the cardiovascular, respiratory, musculoskeletal and other systems (Shealy, 1999). However, Unani-Tibb recognised the undoubted benefit of reasonable and appropriate exercise centuries ago, accepting that the body could benefit health-wise from an increase in body heat to an extent depending on the quantity, degree of intensity, and the amount of rest taken afterwards. Physical rest is considered by Unani-Tibb as an active, rather than passive, contributor to the promotion of healing and the maintenance of health.

(d) *Sleep and wakefulness.* Unani-Tibb accepts that good quality and sufficient sleep strengthens physis and all natural functions, and lays down practical recommendations for achieving this when the person is indisposed, and in different seasons (Chishti, 1991).

(e) *Emotional state.* Changes in a person's mind are important in regulating the basic appetites of the body for food, sex, survival and other drives. At the physiological level, changes in emotions have substantial effects on the breathing and blood flow characteristics of an individual (Shealy, 1999). Unani-Tibb advocates programmes of action to enhance the benefits of controlling the emotions, and at the same time neutralizing or reversing the negative health aspects of undisciplined emotions.

(f) *Elimination.* Unani-Tibb considers that the efficient operation of these natural bodily functions is of immense importance in maintaining the internal harmony which is a prerequisite for excellent health.

Summary of Unani-Tibb

Unani-Tibb is a comprehensive healing system which has its roots in Greek, Arabic and Western medicine. It is a humanistic and holistic approach to health and illness, which recognizes the physical, mental, emotional and spiritual components of health. The philosophy of Unani-Tibb is based upon the concepts of qualities, humours, temperament and physis. The focus of Unani-Tibb is on the empowerment of individuals to take responsibility for their own health, by acknowledging the importance of the governing factors - the food and drink we consume, the air we breathe, the disposal of toxins from the body, the quality of our sleep, our emotions, and the physical exercise we partake in. Accurate diagnosis is of paramount importance in Unani-Tibb, and accounts for much time and effort.

Treatment of ailments is carried out by three main approaches: dietotherapy, pharmacotherapy, and regimental therapy, according to the patient's temperament, and the particular ailment affecting him or her.

2.5. Comparative analysis of Unani-Tibb, orthodox bio-medicine and African Traditional medicine

A brief overview of the commonalities between these systems of medicine will now be provided. It is apparent that even though there may be marked differences between the three systems, Unani

Tibb, as a complementary approach, has much in common with both orthodox bio-medicine and African Traditional medicine.

2.5.1. Orthodox bio-medicine and African Traditional medicine

Whilst African Traditional healers may be more tolerant towards orthodox bio-medical practitioners, the converse is unfortunately not the case. Whereas some orthodox bio-medical practitioners are enthusiastic in their appreciation of the merits of African Traditional medicine, others are largely indifferent. There are a number of reasons for this, including a rejection of anything perceived as non-scientific, dismissal of the role of non-physical dimensions in the healing process, and the denial of the efficacy of herbal and other remedies employed by the traditional healer (Gilbert et al, 1998).

Another problem highlighted by orthodox medical practitioners is the lack of evidence on efficacy. Although there are sufficient data to confirm the efficacy of African Traditional medical practice, it is a system of medicine which is often demonised, due to its so-called non-scientific and informal nature. However, the riposte from supporters of African Traditional medicine is that the healing processes do not occur in an atmosphere which is conducive to scientific work. Also, the point is reinforced that there are many elements intertwined in the healing process, including social pressure, economic factors, personal interests, status in community, as well as spiritual or psychological aspects - and that the answer to healing problems cannot be provided solely by Western science and technology (Van Rensburg et al, 1992).

The accusation has been levelled at African Traditional medicine practitioners that their claims to cure far outweigh the reality of their healing ability, and that there is a powerful placebo effect in operation. Skeptics therefore suggest that the reasons for the clientele's faith in traditional healers are unfounded, as healing could be explained by normal recovery due to the natural healing ability of the body, and that success is better remembered than failure. These skeptics go on to suggest that failure is often blamed upon poor compliance, bad luck, or even sorcery (Van Rensburg et al, 1992).

Another point of disagreement between African Traditional medicine and other medical doctrines is that the knowledge and skills of the traditional healer are usually shrouded in secrecy (Van Rensburg et al, 1992; Hammond-Tooke, 1989). In the training context, they are passed on from master to learner orally, not via the written word. As a result, there is no accumulation in time of medical tradition or lore, or any built-in checks on its efficacy, or any real professional contact between healers practicing in different parts of the country or sub-continent. Those healers who

have attained prestige and recognition through their practice, especially herbalists, guard the secrets of their medicines jealously.

2.5.2. Unani-Tibb and African Traditional medicine

There are a number of congruencies between these two systems. Just as African Traditional medicine includes aspects of spirituality in the healing process, until the last century the Unani-Tibb practitioner extensively incorporated spiritual aspects in the practice of medicine (As-Suyuti, 1994; Tobyn, 1997). Even though the formalisation of Unani-Tibb training is in keeping with the orthodox bio-medical model as applied over the past 50 years, the recognition of the importance of spirituality is still very much part and parcel of the Unani-Tibb practitioner. However, even though the training of Unani-Tibb practitioners (or *hakims*) is along the lines of the orthodox bio-medical model, the following similarities are still very evident in the philosophy and practice of African Traditional medicine and Unani-Tibb (Hammond-Tooke, 1989; Jamia Hamdard, 1993; Bakhtiar, 1999).

(a) *The recognition of spirituality.* The influence of spiritual practices on the soul/spirit is acknowledged.

(b) *The humoral theory.* This is recognised in clinical procedures such as blood cleansing and the removal of unclean blood.

(c) *Cultural practices.* These embrace such diverse activities as elimination techniques (purging, venesection, and cupping) and lifestyle changes (sleep hygiene, food and drink regulation) as part of primary healthcare.

(d) *Use of natural substances*. Plant (herbs and dietary components), animal and mineral medications are often used as part of the healing process.

These congruencies between Unani-Tibb and African Traditional medicine need to be subjected to further research, in order to explore this connection more conclusively, and clarify their origin, development and perceived benefits.

2.5.3. Unani-Tibb and orthodox bio-medicine

Both Unani-Tibb and orthodox bio-medicine can trace their origins back to the same source. Both disciplines accept that Hippocrates was their originator, the one who made the break from magic to science in the theory and practice of medicine. To this day, the Hippocratic Oath is the cornerstone of medical ethics in orthodox bio-medicine. For millennia, the progress of both medical paradigms,

one of which evolved into Unani-Tibb and the other into orthodox bio-medicine, moved along the same pathway, starting with Hippocrates, and were influenced tremendously by pioneers such as Galen and Ibn Sina, and later Culpeper (Tobyn, 1997).

The pathways between the two disciplines began to diverge, as we saw earlier, at the time of Descartes during the Renaissance, and separate even more with the advent of the chemical industry during the Industrial Revolution. The schism was finally completed by the influence of the theory of specific aetiology, espoused by Pasteur and others.

The main thrust of orthodox bio-medicine is the suppression of symptoms, so it is particularly effective in dealing with acute conditions. For Unani-Tibb, the main thrust is to encourage the body's innate defense and healing mechanisms in dealing with the internal and external disturbances which lead, if not corrected, to a particular ailment. The healing process is supported by an awareness of the importance of behaviour and lifestyle discipline. Unani-Tibb is therefore mainly, but not exclusively, appropriately suitable for chronic ailments.

In the light of this, the integrative approach of combining orthodox bio-medicine with Unani-Tibb makes sound sense. They are not mutually exclusive, nor contradicted in any meaningful way by their underlying philosophies (Bell, Caspi, Schwartz, Grant, Gudet, Rychener, Maizes & Weil, 2002).

2.6. Deficiencies of orthodox bio-medicine in the South African context

As this study is aimed at assessing the potential for integrating Unani-Tibb into the current training of orthodox bio-medicine, we will restrict the discussion on the South African healthcare scenario to the role played by orthodox bio-medicine.

As mentioned in Chapter One, there are three basic issues which are relevant to the unsatisfactory situation associated with orthodox bio-medicine: (a) the high cost of healthcare; (b) the actual effectiveness; and (c) the appropriateness in our multicultural society.

Economic aspects of orthodox bio-medicine

Perhaps the most significant of the above issues is the cost associated with orthodox bio-medicine, especially with the limited resources available in the country. This fact was highlighted in the progress reported in both the Government's Year Book (2002) and in the previously mentioned White Paper (Department of Health, 1997), which stated the impact that limited financial resources have on the quality of healthcare in South Africa, where 50% of South Africans still live below the poverty line. Particularly noteworthy is that 11.5% of the population earns less than $US1 per day, and 38.5% of the population earns less than $US2 per day (www.nationmaster.com).

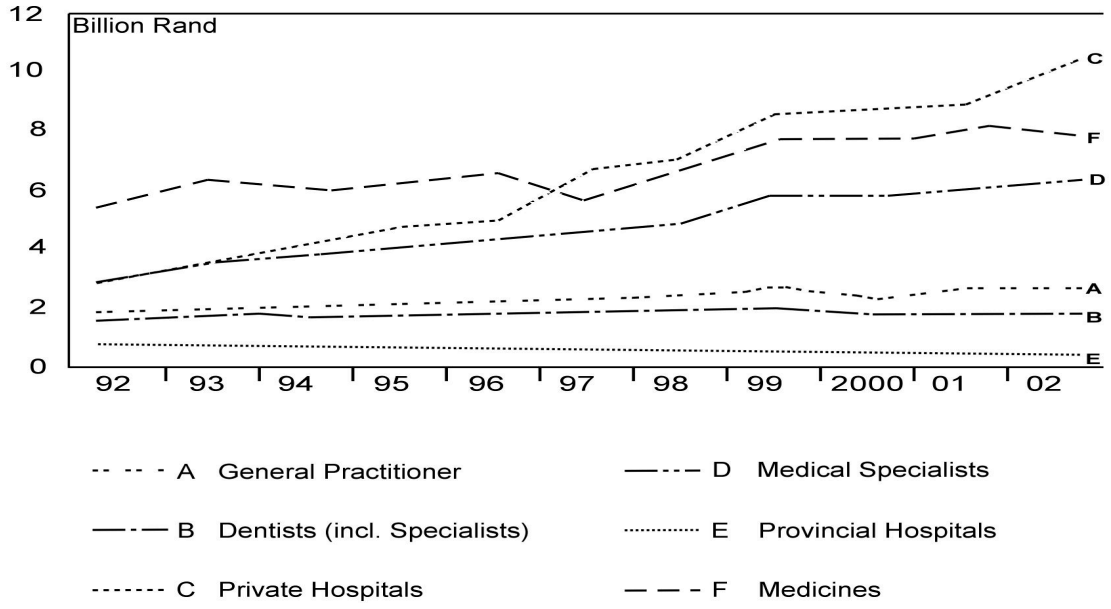
From the literature on the present practice of orthodox bio-medicine in South Africa, the high and escalating cost of healthcare can, to a large extent, be attributed to the following shortcomings:
(a) Lack of understanding of the underlying cause(s) of illness. This can easily result in the demand for a series of costly (but frequently inaccurate), time consuming and often unnecessary diagnostic and investigative procedures.
(b) Treatment is usually aimed at suppression of symptoms, rather than dealing with the underlying cause(s). In many cases this is partly or totally ineffective, for a number of reasons: the patient may be prone to adverse drug reactions, the patient may fail to comply with further treatment, and iatrogenic complications may develop. This can have a significant impact on the cost-effectiveness of treatment.
(c) The first treatment option is generally drugs or surgery. Both of these are already expensive, and this situation is likely to escalate markedly in the near future.
(d) The failure to accept the need for a holistic or multidisciplinary approach to many common ailments, which we now know have more than one contributory cause. These multifactorial disorders are not likely to respond satisfactorily to therapeutic intervention by a single agent.
(e) Neglect in empowering the patient to take control of their own health. This creates a dependency state of mind in the patient, and an abdication of responsibility to the doctor. The patient therefore resorts immediately to medical care when confronted by a medical problem, rather than explore other, less expensive, therapeutic options.

The financial implications of orthodox bio-medicine are evident from the 2002-2003 Annual Report of the Council of Medical Aid Schemes in South Africa. This report reflects a total of R35.6 billion paid out for the *total benefits during 1992-2002* (*Figure 1*) with an average cost of beneficiary per

month of R424.81 (R5097.72 / $US483.65 per annum), assuming an exchange rate at the time of R10.50 to the $US in 2002. These costs comprised almost entirely of orthodox bio-medical care (Council for Medical Schemes, Annual Report: 2002-03).

However of special significance in this report is the marked increase in hospitalization (private hospital costs increased from 3 to 10.5 Billion Rand) over this period as indicated in the graph below:

FIGURE 1: TOTAL BENEFITS PAID 1992-2002



In addition, medical specialist costs have increased substantially, from 3 to 5.3 billion Rand. In contrast, payouts to General Practitioners (GPs) have only increased from 2 to 3 billion Rand. Particularly noticeable is that the increase in private hospitalisation and specialist costs is at a substantially high percentage when compared to the other medical service providers (dentists, GPs and allied and other support health professionals which include physiotherapist, speech therapists, and dieticians).

This increase in costs in both private hospitalisations and referrals to specialists has contributed substantially to the increase in cost of orthodox bio-medicine healthcare. Moreover, the fact that specialist treatment requires a GP's referral undoubtedly highlights the ineffectiveness of the GP, both with respect to diagnosis and to treatment. In addition, the increase in the rate of hospitalization which is in many cases mandatory for a number of diagnostic and exploratory procedures increases the potential for iatrogenic reactions. I interpret the increased costs of private

hospitalisations, medicines, and referrals to medical specialists as being a major contributor towards the high total cost of orthodox bio-medicine, and also indirectly reflect on the ineffective treatment by general practitioners.

The high cost of orthodox bio-medicine is clearly illustrated if we evaluate the per capita health expenditure of different countries of the world from the World Bank's website (www.worldbank.org). In countries belonging to the European Monetary Union (EMU), recent figures (2000) reveal that the average health expenditure per capita is $US1808.50, and in high income countries (which includes the United States, Canada and much of Europe) the average health expenditure per capita is $US2736.50. These are countries where orthodox bio-medicine is the predominant system of medicine. By comparison, in South Asian and Sub-Saharan countries, where traditional medicine is the predominant system of medicine, the health expenditure per capita is $US21.40 and $US29.10 respectively. The above figures clearly illustrate that from the cost perspective alone the broad introduction of orthodox bio-medicine is not a viable option for the South Asian and Sub-Saharan countries *(Appendix I)*.

Of particular interest is that the per capita health expenditure of $US255 per annum in South Africa is much higher than the average for the South Asian and Sub Saharan countries. This is one result of the apartheid era, as well as the strong North Atlantic influence that promoted orthodox bio-medicine at the expense of traditional medicine, especially African Traditional medicine. Whilst traditional medicine has played an important role in health delivery in South Asian and other Sub Saharan countries, in South Africa the formal acknowledgement of traditional medicine is still in the development stages.

The South African Department of Health is fully aware that the extensive imposition of orthodox bio-medical practice in the South African population as a whole will place a tremendous strain on the South African national health budget (Government's Year Book, 2002). Exploring alternative cost-effective methods is therefore a major priority for our country, in the diagnosis and investigation of disorders, and in the encouragement of preventative healthcare measures which can be equally effective, more satisfactory to the patient, and substantially more affordable.

Efficacy of orthodox bio-medicine

Earlier, I referred to the perceived deficiencies of orthodox bio-medicine, a number of which related to its lack of efficacy in the South African context. This is largely the result of:
(a) A lack of a holistic approach, which follows the doctrine of specific aetiology, reductionism, and a tendency to view the body as a machine. Any concern for a spiritual component has been suppressed.
(b) A single-minded focus on eliminating the symptoms of disease, often by the deployment of numerous drugs or major surgery. Scant attention is usually paid to the actual cause of the disorder.
(c) Frequent iatrogenic disorders and side effects often negate any clinical benefit that orthodox treatment has achieved.

Appropriateness of orthodox bio-medicine

Apart from the economic obstacles and lack of efficacy associated with orthodox bio-medicine, there is the matter of its appropriateness within the South African context. The philosophical basis of orthodox bio-medicine is not subscribed to by much of the population of Africa in general, or that of South Africa in particular. Moreover, there are substantial changes taking place within the country with respect to the 'African Renaissance' (NEPAD, 2004) and the re-establishment of African values. As part of these processes, the recognition of traditional medicine and traditional healers, as well as the re-establishment of traditional norms and values is taking place. This necessitates the need for a health system that is in keeping with the cultural and spiritual needs of the people of South Africa.

Aside from the economic obstacles which need to be overcome in order to extend the practice of orthodox bio-medicine from a minority to the whole population, there is also the issue of appropriateness. A number of factors oppose the general introduction of this system of healthcare. These must be taken into account, as they have a marked effect on the patient's Quality of Life.

(a) In the South African scenario, for most of the population the healing process involves co-operation between the healer, the patient, his or her family and even the community. The 'top-down' approach favoured by the orthodox medical practitioner is therefore not really appropriate in the majority of medical consultations.
(b) Orthodox bio-medicine generally does not recognise and cater for the patient's needs. The

patient is regarded as anonymous and lacking in individuality. Again, this 'goes against the grain' of the traditional healing paradigm, and so contributes to the inappropriateness of orthodox bio-medicine.

(c) There is an increasing lack of confidence and even mistrust of doctors in general, partly due to the large amount of adverse publicity which has followed a series of financial malpractice, corruption and over-servicing scandals in both the diagnostic and the therapeutic areas.

Many doctors currently in practice qualified at a time when white, male doctors were preferentially enrolled in Medical Schools. As a result, many doctors in present day practice are not in tune with the cultural and religious beliefs of many of the patients, especially in the rural and peri-urban areas of South Africa.

2.7. Integrative approach to healthcare

Notwithstanding the obvious advances and technological improvements that orthodox bio-medicine has to offer to both present and future healthcare, the deficiencies of this medical system, as outlined above, needs to be addressed. An integrative approach to healthcare could possibly emerge from this analysis.

The integration of complementary medicine with orthodox bio-medicine has been under discussion for some considerable time. As mentioned in Chapter One, this approach of integrating complementary medicine with orthodox bio-medicine in order to overcome the identified shortcomings has generated substantial interest and comment. This renewed interest in complementing orthodox bio-medical care results from an increasing demand from consumers who are dissatisfied with the existing situation. This may have arisen from adverse reactions to their medical treatments or from a lack of expected clinical efficacy, the high costs of diagnosis or treatment, or from a perceived lack of an holistic approach. Research shows that complementary practitioners make the patient feel more in control of their condition and subsequent treatment. Another factor is that many patients want to be regarded as whole people with individual minds and spirits as well as bodies, and expect these dimensions to be incorporated into the diagnosis and treatment of their condition (Rees & Weil, 2001).

The increasing need for access to complementary medicine is patently evident from recent statistics emerging from a number of countries. In particular, in Australia, the UK and the USA, there has been a three-fold rise in spending on complementary medicine over the last ten years, and there are twice as many consultations with complementary medical practitioners than with orthodox bio-medical practitioners (Coulter & Willis, 2004).

Another sign of increasing interest in complementary medicine is that some employers are now responding to the demands by employees for treatment with techniques other than those that orthodox bio-medicine supplies (Hurd, 2000; Coulter & Willis, 2004). For example, in the USA healthcare insurance agencies will now refund costs to some complementary therapy organizations which are largely run by orthodox bio-medical practitioners. These are patient-centred, wellness-orientated, integrative medical operations which incorporate alternative therapies, lifestyle modification, mind-body counseling and nutritional supplementation as ways of achieving and maintaining optimal health (Hurd, 2000).

As was discussed earlier (page 18)**,** an integrative approach consists of a combination of therapies from different medical paradigms in a coordinated and mutually supported programme of care for the optimal benefit of the patient. In practice, this selectively incorporates elements of both complementary medicine and orthodox bio-medicine, and merges them into a treatment programme to the benefit of both patient and practitioner. For the patient it means more appropriate and cost effective treatment, and for the practitioner it means an opportunity to apply broader, more relevant therapies. Successful integration of two or more health systems implies that the best aspects of each modality involved would be selected in order to provide a more extensive, effective approach to healthcare.

An integrative training programme which would address the needs of orthodox bio-medical practitioners and overcome the deficiencies of their present systems would therefore have to be considered. In developing an integrative medical training model that is appropriate for South Africa, the selection of elements of complementary medicine which need to be introduced into the plans for the comprehensive treatment in conjunction with orthodox bio-medicine would furthermore have to be addressed and identified.

In an earlier part of this chapter (section 2.3.1), the deficiencies of orthodox bio-medicine were extensively analysed. Ideally, a partner to orthodox bio-medicine in an integrative system of

healthcare should be able to address or counteract these deficiencies. Also in an earlier section (section 2.4.4.) the features of Unani-Tibb were highlighted and summarized. When the weaknesses of orthodox bio-medicine are juxta-positioned, it can be seen that the deficiencies of orthodox bio-medicine can be compensated for by Unani-Tibb (see Table 2 on next page).

TABLE 2: WEAKNESSES OF ORTHODOX BIO-MEDICINE AND STRENGTHS OF UNANI-TIBB

ORTHODOX BIO-MEDICINE	UNANI-TIBB
Weaknesses	**Strengths**
▪ There is a lack of a holistic approach. ▪ The body is regarded as a machine, not an extremely complex system of physical, mental and spiritual interactions. ▪ Side effects and other treatment-related disorders (iatrogenesis) bring more expenses. ▪ No patient empowerment. ▪ Usually offers only short-term symptomatic relief, with little potential for prevention or long-term impact. Therapy directed at symptoms rather than underlying cause. ▪ Most of the population excluded from full treatment. ▪ Drugs are invariably used as a first resort - no concern for encouraging lifestyle changes. ▪ Multiple diagnostic and investigative tests are often carried out unnecessarily, as a substitute for diagnostic skills. These are expensive, intrusive and time consuming. ▪ Poor patient interaction with little involvement, if any, in diagnosis and treatment, and a passive recipient of external diagnosis and therapy. ▪ Growing rejection due to expense and lack of efficacy. ▪ Although it is seen as effective for short-term benefit, there is justifiable scepticism on long-term benefit of therapy.	▪ It treats the patient holistically, not just the signs and symptoms of the ailment. ▪ It recognises the inherent wisdom of the body, namely physis; ▪ There are minimal side effects and iatrogenic conditions associated with Unani-Tibb. ▪ Unani-Tibb empowers the individual by allowing him/her a say in the decision process. ▪ It is primarily healthcare focused, rather than disease focussed. ▪ Acceptable to all the population. ▪ The philosophical principles of Unani-Tibb can provide a comprehensive understanding of the causes of illnesses. ▪ It is cost effective. ▪ Unani-Tibb has a wide variety of diagnostic and treatment options. ▪ The practice of Unani-Tibb is in keeping with the cultural needs of the population, with a number of similarities to African Traditional medicine. ▪ Both orthodox medicine and Unani-Tibb have the same philosophical roots, so integration should not pose problems. ▪ Seeks to maintain long term optimal health.

From the above table it is evident that the integration of Unani-Tibb with orthodox bio-medicine could be considered an appropriate match for an integrative programme.

The ultimate beneficiary of any healthcare system should be the patient. Ideally the healthcare system should provide relief from the patient's particular disorder which is effective, affordable and appropriate to the cultural environment. This requires open-mindedness and a willingness to accept the value of other medical paradigms in dealing with the particular clinical disorder. In particular, the recognition of "potentially mutually enriching relationships that can occur between indigenous and modern knowledge" (Lazarus, 2004: 23).

2.8. Medical education in South Africa

This section deals with the progress of medical education with respect to African Traditional medicine, orthodox bio-medicine and complementary medicines, as well as recent trends in integration of the different health systems.

2.8.1. Progress of medical education

Educating healthcare professionals has always been an essential component in the promotion of health maintenance as well as the alleviation or curing of diseases. There is a fine line between the history of formal medical education and the history of medicine itself. As the practice of medicine has evolved over time and spread geographically, there has been a strong motivation to fulfil the need to maintain a stream of competent graduates in the theory and practice of medicine. In support of this, practitioners of a particular medical paradigm who have proven themselves competent and experienced are often co-opted into the training of the next generation of practitioner.

From ancient times, transmission of information as folklore was done orally or written on papyrus or animal skins and eventually on paper. Hippocrates was responsible for not only placing medicine on a scientific basis but also gave direction on medical education on the Island of Cos where discussion, deliberation and interaction between groups of students, practitioners were held.

During the Arab era this direction was extended so that training became more formalised, with the establishment of hospitals and training institutions (Chishti, 1991). In this period, guidelines of quality assurance for healthcare practitioners were introduced. These extended to establishing criteria for effective medical training and evaluation. This process was greatly assisted by the arrival of the complete codification of the philosophical principles of Hippocrates and Galen, which were

integrated into the practice of medicine. In fact, the Canon of Medicine, by Ibn Sina, provided the core training material for medicine training and instruction in European universities until well into the 17th century. The training of medicine during this era paved the way towards equal emphasis on the maintenance of health as well the curing of diseases (Rees & Shuter, 1996).

With the Industrial Revolution, and the advent of the specific aetiology theory of the origin of disease, the focus of medical training and education switched more to understanding biochemical processes. This led to a new approach in formal medical education, based purely on a medical system exclusively centred upon a mechanistic model of the human body, health and disease. Little, if any, attention was paid to the role of the mind in health and disease. In fact, psychiatry was largely regarded as the 'poor brother' of the main disciplines such as cardiology and neurology, and education in this field was not up to the same standards. It was only when mood altering drugs were introduced that psychiatry became more acceptable to the orthodox bio-medical community, as it implied that even mental conditions have an organic basis.

If one evaluates the present day training of orthodox bio-medicine, based upon the course content as offered by some of the Medical Schools, a variety of technical subjects now encompasses training in new areas as diverse as genetic engineering, molecular biology and hi-tech diagnostic techniques. Although admirable in many ways, this in-depth training does not allow for effective training of the healthcare practitioner in relevant and important practical subjects such as mind: body interactions, and social and environmental factors in disease. Consequently, the over-specialisation in training has just made the bigger picture ill-defined and even incomprehensible, even if the criteria for effective training, such as outcome-based processes, are adhered to.

African Traditional medical education

In general, practitioners of African Traditional medicine have little, if any, 'formal' training compared to that received in the orthodox Medical Schools. From a worldwide perspective, people become folk healers in a number of ways. They may inherit the position, having been born into a 'healing family'. In other traditions, being, say the 7th son of a 7th son may be enough to qualify the person as a healer. In other cultures, healers may be selected objectively purely on the appearance of characteristic birthmarks or birthing features. Discovering that one has 'the gift' (that is, possessing an inborn or acquired 'healing power') may also propel individuals to the traditional

healer role; this may become evident through intense emotional experiences, ecstasy, dreams or trances occurring spontaneously or during a febrile illness.

More commonly, however, the traditional healer assumes the position after an apprenticeship (now termed a *learnership*) to an older, established healer which usually lasts for several years (Van Rensburg et al, 1992). In some parts of the world, such as East Africa, a person becomes a traditional healer (or 'bush doctor') by personally acquiring a particular remedial skill (Sindiga et al, 1995). In practice, there is a substantial overlap in these pathways, and an apprentice usually follows one or more pathways simultaneously (Gilbert et al, 1998). For example, Masai healing skills are gained through informal training, or are inherited from family members. Many serve as apprentices or learner-observers with practicing healers. Only a small percentage (approximately 3%) claim divine intervention, from dreams, revelations or sickness (Sindiga et al, 1995).

Generally, medical practice for the chosen ones is a serious and demanding profession, and they go through extensive training and initiation. The person served as an apprentice, usually to his or her father. The traditional healer can be trained either as a generalist, or as a specialist.

Ethical standards relating to the practice of healthcare usually compared favourably to western standards. Confidentiality, knowledge of limitations of therapy, referal, peer evaluation and auditing are strict (Sindiga et al, 1995). However, representatives of the modern health sector would prefer to see traditional healers being subject to similar norms which apply in the training of orthodox practitioners (Gilbert et al, 1998). A major obstacle to this requirement is the reluctance of many African Traditional healers to part with the knowledge base of their stock in trade; their techniques and skills, their medicines and their procedures.

Orthodox bio-medical education

Education in the orthodox medical system is not merely an academic process of learning during which knowledge and skills are imparted to students. It is also a socialising process which schools students in the values and ways of their professions in the free-market healthcare system presently operating in South Africa (www.studentbmj.com). The values of individualism, entrepreneurialism, competition, profit-taking and the right to self-determination are all advocated to be the ideal basis for this country's health service delivery.

Medical training offers the ideological frame of reference within and against which providers have to evaluate and consider reforms of the present healthcare system. Naturally, this gives rise to "strong ideological resistance to any reform initiatives which could deprive the provider of any privileges and benefits of service delivery in a free market" (Klopper, 1986).

Medical education in South Africa from the time of initial colonialisation by Europeans in the 17th century followed roughly the same track as it did in Europe and America. Until the late 18th and early 19th century the education process was relatively informal, very limited, and based on the apprenticeship model. Consequently it had little influence or power within the colony. Very few effective drugs existed, with the exception of opium and belladonna derivatives, and the work of doctors was largely confined to emotional assurance and psychological assistance. Medical practice was largely based on a patronage system, with patients choosing those particular doctors whom they believed could help them the most.

By the beginning of the 19th Century, dramatic changes took place. A scientific revolution heralded significant changes for medicine as a profession, and largely accounts for the ascendancy of the bio-medical model. Medicine was becoming fully established as a science, on a par with other sciences. As such, the need for structured education and training became paramount.

The Western medical education sphere was transformed with the arrival of hospital medicine and enormous advances, technology and diagnostic equipment which allowed for improvements in the understanding of anatomy, physiology and pathology. Medical knowledge became the domain of the experts, accessible to a few, and the medical profession developed substantial power of its own. The formal training of doctors developed in the many teaching hospitals which sprang up in the major centres of population, and this gave them power over their patients which they have kept to this day (Gilbert et al, 1998).

These developments were echoed in South Africa by the foundation of Medical Schools attached to a number of hospitals within the country. Of the seven presently established, the first to appear was the University of Cape Town Medical School in 1910, after several years of evolution from the Cape Medical Society which was established in 1827 (South African Encyclopaedia, 1975). Prior to that, little was done by the Dutch East India Company. The first students were predominantly whites, although the first Coloureds and Indians were admitted in 1939. The next medical school to develop was in Johannesburg, in 1920, after pressure from the local branch of the British Medical

Association. Costs were borne by public subscription. The associated teaching hospital was Johannesburg General, with access to a number of satellite hospitals nearby.

The need for an Afrikaaner teaching hospital and Medical School arose from the Afrikaans Policy Declaration of 1932, and this was eventually realized in 1943. Another Afrikaans-speaking hospital was established in Stellenbosch in 1957, with Karl Bremer Hospital initially acting as the teaching facility, then later Tygerberg Hospital.

On the coast in Durban a private school for the training of black doctors had been established in 1922, although it was not recognised by the authorities, and soon abandoned. In 1928 plans were made to found a Medical School, and after many setbacks and delays a Medical School was built in 1948 for 'non-whites' only, as part of the University of Natal. King Edward Hospital was used for training purposes. At the time, the training course was seven years long.

A survey in 1969 revealed that there would soon be a substantial shortfall in doctors for the country, so a further Medical School (at Bloemfontein) was planned. This came on-stream in 1971. Although most of the doctors trained were white, attempts were made to train black personnel as medical aides. Four years of study at Fort Hare were organised, with a fifth year completed at McCord Hospital in Zululand. The course was unpopular, and the quota of trained aides was never reached because of the expense of a long training period and the low medical status attained.

According to the South African Encyclopaedia (1975), the curricula for all Medical Schools were virtually identical, and based on the British model. Training extended for six years (Durban: seven), with a compulsory training as an intern in a recognised hospital. The first year was devoted to the basic sciences, the second to anatomy and physiology, the third to pathology, microbiology, and pharmacology. The remaining years were concerned with ward-based involvement and clinical training.

Post-graduate training was carried out for a further three to four years. This provided effective training and clinical experience, and the candidates themselves taught younger students. Competency of the medical training at the higher level was regulated by the South African College of Physicians, Surgeons and Gynaecologists, which was founded in 1954.

Candidates for Medical Schools were selected until very recently according to strict criteria - usually male, affluent, and white - and other applicants were consigned to training at institutions

such as the Medical University of South Africa (MEDUNSA) or to Medical Schools abroad in, for example, Cuba or the Caribbean. Great importance was attached to the applicant's proven scholastic ability, so ensuring that future doctors were capable of theoretical and research activities. However, since the demise of apartheid, the recruitment of medical students has broadened enormously, bringing in the other racial groups, both male and female. Moreover, attempts are being made to select students according to criteria other than pure academic brilliance. Criteria now include such diverse characteristics such as social conscience, compassion, and an interest in a more personalised and holistic social medicine, which regards the patient not as a syndrome associated with a disease, but as a real, living, unique person (Hammond-Tooke 1989).

Complementary medical education

The training format adopted by complementary medical practitioners in South Africa spreads across the full spectrum, from strictly formal and structured through to informal self-instruction. This reflects the highly heterogenous nature of complementary medicine's philosophy, doctrines, diagnoses and therapies.

Training in the therapeutic applications of numerous complementary medical philosophies and disciplines are widely available to healthcare practitioners and lay-people with diverse degrees of experience and qualifications, as perusal of the daily and weekly quality press will reveal. Acceptance of enrolment is often at the discretion of the training course organisers. Training courses on a very wide range of energy, physical and mind/spirit therapies are conducted according to demand, and usually take the form of either distance learning programmes or weekend seminars/workshops. Understandably, the quality of these courses is not subjected to regular audit, and their practical value is often questionable.

Whilst there exists a wide range of informal training on the one end of the spectrum, at the other end of the spectrum there are the well established schools for homoeopathic and chiropractic medicine. These are presently located at universities in Johannesburg and Durban. In addition, training in Unani-Tibb, Naturopathy, Phytotherapy, Chinese Medicine and Acupuncture commenced in January 2003 at the School of Natural Medicine at the University of the Western Cape (www.uwc.ac.za/naturalmedicine).

With the increase in training of complementary disciplines at tertiary institutions, the Allied Health Professions Council of South Africa has established an education task team to ensure that appropriate training standards and quality assurance in the training of complementary medicine in the country is effectively monitored and maintained.

2.8.2. Development of Unani-Tibb training

The current training of Unani-Tibb at institutions in India and Pakistan has been greatly influenced by the training principles employed in Western medical education. The technological advances as well as techniques that have developed in the training of orthodox bio-medicine have been readily adopted by educationists involved in Unani-Tibb. The original concepts in the Canon of Medicine describing 'the Human Constitution' (elements; temperament; humours; organs and tissues; pneuma; faculties and functions, and so forth), have been incorporated into the basic sciences of anatomy, physiology and biochemistry. Furthermore, modern diagnostic techniques have been introduced into the training process, which are very much along the lines of those included in orthodox bio-medical training (www.hamdard.edu; www.jamiahamdard.edu).

However, even though Unani-Tibb has adopted the advances in orthodox bio-medicine into their training, the current Unani-Tibb training has retained the core philosophies and principles of Unani-Tibb as advocated by Hippocrates and Ibn Sina. The interpretation of aetiology, pathology, diagnosis and treatment, although using modern techniques, is still applied in the light of the philosophical principles of Unani-Tibb.

2.8.3. Integration in medical education

Institutions involved in the training of orthodox bio-medical practitioners are becoming increasingly aware that the needs of the practitioner and, more importantly, the patient, are not being satisfactorily fulfilled. There is a growing recognition that all the cost and effort expended in suppressing the symptoms of a particular clinical disorder which troubles the patient are of little value, if the underlying condition which gives rise to the symptoms is not reversed, rectified or eliminated. If the underlying cause is not addressed, then the symptoms will eventually recur. Although alleviation of troublesome symptoms is usually the overriding priority when a person visits a healthcare practitioner, appropriate therapy should also include identifying and eliminating

the underlying cause or causes of the symptoms. Further treatment should then be based upon neutralising these causes, and so preventing them from recurring in the future.

Orthodox bio-medicine can no longer ignore complementary medicine. Until recently, orthodox doctors generally did not have the appropriate basic knowledge or even understanding of complementary medicine, and had not been through the necessary training courses in their journey through Medical School. Unless they have subsequently undergone training in one or other form of complementary medicine on their own initiative, orthodox practitioners were not familiar with complementary healthcare practices which they could use as adjuncts to orthodox bio-medicine.

The situation, however, is changing in several parts of the world, as the value and relevance of complementary medicine becomes increasingly accepted. There is a discernable trend towards including complementary medical systems in the curriculum for medical students, and this has been underway for some time in several developed countries, especially the USA and the UK (Rees & Weil, 2001). In the USA, it is now recognised by course designers in certain Medical Schools that more training needs to be done, by means of distance learning programmes and internet based training modules (Rees & Weil, 2001). The training of orthodox bio-medical practitioners in complementary medicine is expected to accelerate, as the benefits of such training are obvious to the trainee doctors, and as a definite and extensive need for it continues to be expressed by the community.

Orthodox bio-medical practitioners are beginning to sense the need for formal training in the complementary medical disciplines, especially as there are a wide range of options available. Moreover, their patients would appreciate guidelines to help them navigate the confusing maze of therapeutic options, and be directed to choose treatment which is effective, sensible, correct, and safe (Coulter & Willis, 2004).

This training in integrative medicine could be promoted through one or more routes. Orthodox biomedical practitioners could be actively encouraged to undergo further, extra-curricular, training in disciplines such as Unani-Tibb, Homoeopathy, Ayurveda and traditional Chinese medicine, or with techniques such as acupuncture and hypnotherapy. Alternatively, integrative medicine could be introduced to medical students in orthodox medical schools and centres by providers of the theory and practice of specific complementary systems (Coulter & Willis, 2004). Whichever process of

instruction is adopted, there will need to be substantial agreement on the regulation of content, process and evaluation.

At the national level in South Africa, Unani-Tibb has been incorporated as an elective subject for students undertaking training in orthodox bio-medicine at the Nelson R. Mandela School of Medicine at the University of Natal in 2003, under the auspices of their Traditional, Complementary and Alternate Medicine (TCAM) project (www.ukzn.ac.za). In addition, the School of Pharmacy at the University of Witswatersrand has also included a module called Complementary Healthcare in their training programme (www.wits.ac.za). This module includes an introduction to Unani-Tibb.

Training programmes conducted in Medical Schools should produce fundamental changes in the way that trainee orthodox doctors regard complementary medicine. They will be taught, for example, that it is not only about the use of herbs in preference to drugs. They will be instructed in the importance of educating patients in numerous topics such as chronic diseases, ageing, maintaining health. They will also be made aware of the need to restore core values which have been eroded by social and economic forces.

These objectives would be achieved by further training of orthodox doctors in the theory and practice of a credible complementary medicine selected by them. It would embrace systems such as Unani-Tibb, Homoeopathy and Ayurveda, or individual techniques such as acupuncture. It would also encourage the introduction of practitioners of complementary medicine into traditional orthodox bio-medical training centres and Medical Schools, in order to learn as much as possible about their chosen new medical discipline. Admittedly, a lot of time and effort would need to be expended in order to initiate a paradigm shift towards an emphasis on well-being and healing of the whole person, not just suppression of a specific somatic disease. However, it may be facilitated by the fact that many concepts are those which have, until recently, always been at the heart of medical philosophy and practice.

2.9. Summary and conclusion

Unani-Tibb is not a recently created medical system, arising in response to the dictates of modern fashion. It is a caring system which has a long and honourable tradition of healing the sick and maintaining health, extending back many centuries. Its practice is firmly rooted in a philosophy that includes concepts such as physis and temperament which provide the basis for a rational body of medical knowledge. Unani-Tibb can be used to treat a similar range of ailments that orthodox medicine does. It differs, however, in several ways. Unlike orthodox medicine which looks for a single cause of a disease - microbial, genetic, injury - and a single cure, Unani-Tibb considers that disharmony in the body in one form or another is ultimately responsible for the onset and development of disease. In addition, Unani-Tibb regards symptoms of an illness to be the language of the body, to be listened to and acted upon - not to be suppressed, as with orthodox medicine.

Does Unani-Tibb have a part to play in the South African medical context? The present medical system is troubled by poor accessibility for the majority of the population, aggravated by escalating and largely unaffordable costs to both the patient and the healthcare providers, and increasingly perceived as being not particularly cost-effective. I am convinced that Unani-Tibb has a positive and important role in the South African medical scenario.

In order to assess this possible role in objective terms, a pilot scale training programme in Unani-Tibb practice for established healthcare professionals, leading to a Diploma in Unani-Tibb was initiated. Structure-wise, it consisted of a hybrid system of distance learning modules, created specifically for the project, combined with periodic classroom format training at venues around the country.

The next chapter will focus on the methodology for the development and implementation of this training programme.

CHAPTER THREE

Research methodology

3.1. Introduction

In this chapter the methodology adopted for the preparation, completion and reporting of the study is detailed. A survey of the available literature relevant to healthcare as well as medical education in South Africa was considered essential, as the thesis covered both of these aspects. What emerged from this literature review was the need for an empirical study in the light of the educational and medical challenges in the present South African context. The development and implementation of an integrative training programme for orthodox bio-medical healthcare professionals was therefore initiated. This was followed by an evaluation of the programme, and the implications emerging therefrom in the context of the research questions posed initially.

3.2. Aims, objectives and research questions

The methodology of the study was in keeping with the aims, objectives and research questions of the thesis which are reiterated below:

Aims: The aim of this study was to examine the effectiveness, affordability and appropriateness of integrating Unani-Tibb into a training programme for orthodox bio-medical healthcare professionals in South Africa.

Objectives: The objectives of this pilot study were:

(a) To critically review the current healthcare scenario in South Africa, with particular emphasis on orthodox bio-medicine with respect to its efficacy, affordability and appropriateness (as measured by Quality of Life parameters).

(b) To identify the potential integration of Unani-Tibb with the orthodox bio-medical system.

(c) To develop a suitable integrative training programme for orthodox bio-medical healthcare professionals.

(d) To implement and evaluate the developed training programme.

(e) To assess the impact of the programme in terms of clinical efficacy, cost effectiveness and Quality of Life.

Research questions:

(a) Can the philosophy of Unani-Tibb be effectively integrated into a training programme for orthodox bio-medical healthcare professionals?

(b) Can this integrative programme assist in the enhancement of the delivery of orthodox bio-medicine in South Africa, with respect to effectiveness, affordability and Quality of Life?

3.3. Research approach

The research approach adopted in this study contained both qualitative and quantitative components (Pretorius, 1995). The qualitative component was related to the integration of the contents of the Unani-Tibb training programme into the medical practice of the participants, and to its practical implementation. It also related to the clinical benefits and Quality of Life parameters emerging from the clinical study, as observed and interpreted by the participants, and as recorded by the patients recruited for the study. The quantitative aspects of the thesis pertained to the cost parameters of treatment as well as to healthcare in the country as a whole.

3.3.1. Qualitative approach

The qualitative nature of the research, as mentioned above, included reviewing the quality of healthcare delivered by healthcare professionals in South Africa in the context of their training. These qualitative aspects were discussed in detail within the context of the deficiencies that exist in the training of orthodox bio-medical healthcare professionals. Some of these deficiencies include (a) a lack of a holistic approach; (b) a limited understanding of the causes of diseases; (c) the inability to diagnose and treat effectively, (d) adverse side effects and iatrogenic conditions; and (e) the negative impact on Quality of Life.

The qualitative analysis of healthcare also assessed the patients' perspectives regarding effectiveness, affordability and appropriateness of the treatment they received.

3.3.2. Quantitative approach

The quantitative nature of the research included measuring the outcome of healthcare delivered, with respect to the parameters of affordability, by assessing the cost of healthcare to the patient. The outcomes were quantified before and after the implementation of the integrative training

programme. These quantitative parameters included various tests assessing blood sugar levels, blood pressure recordings and other quantitative tests.

In addition, the financial burden incurred by the country, as well as relevant global comparisons of cost of healthcare per capita were also evaluated.

3.3.3. Development of the integrative training programme

The research approach adopted for the development of the integrative training programme commenced with identifying the deficiencies in the training of orthodox bio-medical system, with specific focus on its effectiveness, affordability and appropriateness. These deficiencies were assessed in order to identify the needs that the integrative training programme had to fulfil by introducing the principles of Unani-Tibb, as a complementary approach to the practice of orthodox bio-medicine.

3.3.4. Evaluation of the integrative training programme

The evaluation of the integrative training programme included assessing participants' level of understanding of the principles and philosophy of Unani-Tibb, as well as the impact of incorporating the training programme into their practice.

The assessment of the participants' understandings of the integrative training programme was done by reviewing the participants' results from the designed assignments, case studies, practical exercises, examination results as well as their research project.

The evaluation of whether the integrative training programme reflected an improvement in meeting the outcomes identified were obtained from the questionnaires completed by both participants as well as the patients. More importantly, however, were the evaluation results obtained from the participants' research project with respect to clinical efficacy, affordability and appropriateness.

3.4. Overview of the research design

Tabulated below is the methodology used to meet each of the research objectives:

TABLE 3: OBJECTIVES OF THE STUDY AND METHODOLOGY USED

OBJECTIVE	METHODOLOGY USED
1. To critically identify and review the current healthcare system in South Africa with respect to its efficacy, affordability and appropriateness (Quality of Life).	1. A literature review of the current health system in South Africa, identifying the challenges it faces with respect to efficacy, affordability and appropriateness (Quality of Life) and the training thereof.
2. To identify the role of Unani-Tibb within the current healthcare system.	2. Literature review of the principles of Unani-Tibb and its possible role in an integrative model.
3. To develop an appropriate integrative training programme for healthcare professionals.	3. - A review of the current orthodox training in South Africa as well as Unani-Tibb internationally. - Identifying the needs analysis of the integrative training programme. - Planning the integrative training programme for the University of the Western Cape (UWC). - Developing the programme (including identifying the required outcomes and content, developing the training modules).
4. Evaluation of the integrative programme.	4. Assignments, practical exercises, presentations, examinations, mid-course and end of course evaluation questionnaires and the participants' research projects.
5. To assess the impact of the programme with respect to the provision of clinical efficacy, cost effectiveness and appropriateness (as Quality of Life).	5. Review of the results obtained from the questionnaires given to the participants and patients as well as the results of the participants' research projects.

3.4.1. Overview of sample

A total of 24 participants enrolled for the programme: 11 medical doctors (general practitioners), 2 homoeopaths and 11 primary healthcare nurses. The ethnic breakdown consisted of 11 Blacks, 11 Indians and 2 Whites. The gender breakdown consisted of 17 females and 7 males.

The reasons for the participants decision to enrol in the course were assessed through the use of a customized questionnaire. A specimen of this is provided in *AppendixII*.

3.4.2. Overview of data collection methods

The data collection methods for the study involved the following:

Literature review

This was obtained through the perusal of books, journals and periodicals from different sources, including libraries and the Internet.

Development of the training programme

Information on different training programmes were obtained from various universities involved in medical education, both orthodox and Unani-Tibb, as well as from libraries, medical literature and other electronic sources.

Programme evaluation

Data from the participants was obtained by means of questionnaires as well as through evaluating their assignments, practical exercises, presentations, examination and their research projects. Results were also obtained from questionnaires that were targeted at the patients. All data collected was kept confidential, particularly by not disclosing names of patients.

3.4.3. Analysis of data

An analysis of data was undertaken to assess whether: (a) Unani-Tibb could easily be integrated into orthodox bio-medicine and (b) whether this integrative training programme would have a positive impact on the delivery of effective, affordable and appropriate healthcare in South Africa.

The data to establish the first part, namely, whether Unani-Tibb could be integrated into orthodox bio-medicine, was obtained via questionnaires completed by the participants. These questionnaires assessed certain aspects which were relevant to the integrative programme, such as identifying the participants' motivation in enrolling for and completing the programme. In addition, questions were included to appraise the participants' understandings of the different principles and practices of Unani-Tibb, and how they considered these could be incorporated into their professional activities. These questionnaires were designed in the format of an analogue scale of 1-5 with defined minimum and maximum criteria.

In addition to questionnaires, a number of assignments and practical presentations, a mid- year examination, case studies as well as research projects were designed, allocated and evaluated in order to answer the first research question - that is, whether the philosophy of Unani-Tibb could effectively be integrated into a training programme for orthodox bio-medical healthcare professionals.

With respect to answering the second research question (namely, whether this integrative programme could assist in the enhancement of the delivery of orthodox bio-medicine) the data analysed was also derived from questionnaires, case-studies, and more specifically, the impact of the programme was assessed by evaluating the participants' research projects. These evaluations provided a measure of the benefit of the integrative programme to the participants and their patients with regards to clinical efficacy, cost benefit and Quality of Life.

The specifically designed questionnaires used to analyse qualitative and quantitative results produced by the participants' research project were designed using the Microsoft Excel spreadsheet programme in order to illustrate the accurate findings in a graphical format.

3.5. Literature survey

I was both surprised and challenged by the relative scarcity of printed information, especially books, clinical articles and reviews, which are available in the English language, on the subject of Unani-Tibb - especially in the didactic, clinical and socio-economic fields. Also, there are not a great number of websites devoted to this topic. However, there has recently been an evident (and gratifying) upsurge in interest on the topic of Unani-Tibb and associated medical disciplines. In

particular, there is the relatively recent publication of a translation of Ibn Sina's seminal *Canon of Medicine* by Jamia Hamdard (1993) as well as the adaptation of O.C. Gruner's translation of the *Canon of Medicine* of 1929 by Laleh Bakhtiar (1999). This may reflect renewed interest in the traditional wisdom contained within Unani-Tibb, perhaps encouraged by an increasing disillusionment with orthodox bio-medicine.

However, literature on the analysis of the present healthcare situation in South Africa is much more vast and readily available. This is understandable in the light of the immense importance of healthcare education and medical practice in this country, at this particular time in our history. In the wider context, the groundswell of opinion and comment about the shortcomings of orthodox bio-medicine in providing reasonable healthcare for all communities is also well documented.

Although it was neither practical nor feasible to access copies of all resources, as many are presented in foreign languages, such as Arabic, Urdu or Persian (which are not available or accessible in South Africa), the references consulted were regarded as representative of the particular body of knowledge on a specific topic.

Secondary sources were identified from primary source references. A number of electronic databases were also searched, with a reasonable degree of success.

3.5.1. Electronic searches

The **literature items** listed were obtained from either (a) the Ibn Sina Institute of Tibb library; (b) the University of the Western Cape (UWC) library, (c) the Municipal (Gauteng) library; (d) the Witwatersrand University Medical School library; (e) the private libraries of Institute staff; or (f) electronically, via the Internet. Where literature was unavailable (for example: out-of-print, geographic constraints) abstracts were substituted.

Keywords. The following were used: Unani-Tibb – healthcare education - holistic - integrated - cost effective - empowerment - medical philosophy - diagnostic techniques - disease management.

Search engines. The following were used: www.google.com; www.nutch.com; www.hst.org.za; www.globalsearch.co.za ; www.revivalnook.co.za ; www.anc.org.za.ancdocs; www.doaj.org; search.epnet.com; bmj.bmjjournals.com

Academic searches included Ebscohost, Infotrac, Nexus, Medline, Sabinet which were accessed via the University of the Western Cape's library electronic resources.

3.5.2. Literature review

A review of accessible literature was carried out to provide:
(a) a review of healthcare in South Africa;
(b) the background of the history and principles of Unani-Tibb;
(c) a critical review of medical practices in Southern Africa with special reference to orthodox bio-medicine;
(d) the feasibility of integrating Unani-Tibb into the current orthodox bio-medical practice;
(e) a review of medical education in South Africa;
(f) the identification of the core Unani-Tibb principles which could be integrated into the programme;
(g) the types of training protocols which could be adopted for the integrative training programme.

3.6. Needs analysis of the integrative training programme

The needs assessment was conducted by evaluating current healthcare in South Africa with specific emphasis on orthodox bio-medicine, and identifying the deficiencies associated with it. The identification of these deficiencies was important as it provided direction for the proposed integrative programme. In this context, therefore, the programme had to:
(a) provide a holistic approach to healthcare;
(b) be readily understood by the participants;
(c) provide an improved understanding of the causes of illnesses;
(d) enhance diagnostic skills;
(e) provide additional treatment options;
(f) allow for easy integration into the participants' current practice;
(g) improve clinical outcomes;
(h) demonstrate cost effectiveness;
(i) show improvement in the patients' Quality of Life; and
(j) be appropriate in the South African context.

A measure of the study was to assess whether the integrative training programme would satisfy the above needs, and so provide the participant with practical clinical competence for application in his or her everyday professional practice.

3.7. Planning and developing the programme

The planning of the programme was a joint effort between the Ibn Sina Institute of Tibb, University of the Western Cape and Hamdard University (Pakistan). The outline of the key outcomes was developed and submitted for approval to the Faculty of Community and Health Sciences Academic Planning Committee – University of the Western Cape, for approval prior to submission to the South African Qualifications Authority (SAQA) and the Council of Higher Education (CHE). This qualification falls under level 8.1 of the National Qualifications Framework (NQF) in the Higher Education and Training Certificate (HETC) band (www.saqa.org.za).

3.7.1. Identifying the target market

Orthodox bio-medical healthcare professionals are spread over a wide range, from a nurse assistant to a specialist physician. Understandably, therefore, tailoring a 'one size fits all' programme would be an impossible task. The practicality and ease of developing a successful programme was targeted at the current scope of practice of a Unani-Tibb healthcare professional, and this was then matched to the bio-medical model. This comparison concluded that the scope of practice of an orthodox bio-medical doctor (general practitioner) was on par with a Unani-Tibb doctor who has completed a Bachelor of Unani-Tibb Medicine and Surgery (BUTMS) degree. The period of training of a Unani-Tibb doctor, which extends over a 5 year period (with a one year internship), is also similar to that of the training of an orthodox bio-medical doctor. The target group was expanded to include registered nurses who possessed a primary healthcare qualification. In addition to these two categories of orthodox bio-medical health professionals, the programme was also made available to homoeopaths. Homoeopathy, together with chiropractic, are two of the complementary disciplines for which extensive training at tertiary South African institutions have been available for many years. Practitioners of these disciplines undertake training in subjects such as pathology, diagnostics and clinical skills, in addition to the basic sciences of anatomy, physiology and biochemistry.

The participants who were selected had to be registered with the appropriate professional councils such as the Health Professions Council of South Africa (HPCSA), the South African Nursing Council (SANC) or the Allied Health Professions Council of South Africa (AHPCSA). An additional requirement was that the participants had to be in active practice.

This target group was considered an ideal beginning for the postgraduate part-time programme. Other orthodox bio-medical healthcare professionals such as pharmacists, dieticians and physiotherapists, were excluded from the pilot study as their training did not possess the necessary diagnostic and clinical components.

3.7.2. Identifying the broad outline of the curriculum

In order to identify the outline of the required curriculum, recognition of prior learning (RPL) of the participants was taken into account. This prior learning took into account the curriculum outlines of course contents from various universities and other relevant training institutions, for example, nursing, medical doctors and homoeopaths (www.wits.ac.za, www.uwc.ac.za, www.ukzn.ac.za, www.dit.ac.za).

A comparison was made between the training of the prospective candidates from the identified target group, and that of the standard training of a Unani-Tibb doctor. The syllabus of the training of Unani-Tibb doctors was obtained from international institutions specializing in the training of Unani-Tibb, particularly Hamdard University (Pakistan); Jamia Hamdard (India) and the Indian Systems of Medicine and Homoeopathy (ISM&H) (www.hamdard.edu, www.jamiahamdard.edu, www.indianmedicine.nic.in). This core training was then compared to the training of the identified target group taking into account the prior learning of the prospective participants with respect to the subject matter of their appropriate qualifications.

The recognition of prior learning (RPL) was in keeping with the Criteria and Guidelines document for Training Providers from the South African Qualifications Authority (1998, page 27):

> Prior learning is the comparison of the previous learning and experience of a learner howsoever obtained against the learning outcomes required for a specified qualification, and the acceptance for purposes of qualification of that which meets the requirements.

The comparison of the syllabi between a Unani-Tibb doctor on the one hand and medical doctors, nurses and homoeopaths on the other hand highlighted that the basic sciences of anatomy, physiology, biochemistry, pathology, pharmacology (orthodox bio-medical), and clinical and

diagnostic techniques were common to both disciplines. However in recent years the training of orthodox bio-medical doctors has adopted the approach of integrating the basic sciences into problem-based learning (www.wits.ac.za, www.ukzn.ac.za).

The additional requirements for the prospective participants to complete the training for a Unani-Tibb doctor would require competency in the following subjects: (a) philosophy of Unani-Tibb; (b) pharmacology of Unani-Tibb: (c) regimental therapies; and (d) governing factors.

In addition to having identified the missing Unani-Tibb components in the training of the prospective participants, consideration was also given towards inclusion of additional requirements into the programme in order to meet the specific South African needs. The programme therefore included spiritual, cultural and holistic aspects as well as patient empowerment.

3.7.3. Programme outcomes

Having identified the target market as well as the broad outline of the curriculum, the overall outcomes for the proposed programme were identified. From the needs assessment the required key outcomes of the programme were determined.

After successfully completing the programme, the learner should have achieved the key outcomes listed in the table below:

TABLE 4: EXPECTED OUTCOMES FOR PARTICIPANTS IN THE TRAINING PROGRAMME

Outcome 1	To recognise the need for a holistic approach to healthcare by recognising the relationship between an individual and the environment.
Outcome 2	To recognize the uniqueness of an individual.
Outcome 3	To have an understanding of the concept of humours and temperament.
Outcome 4	To recognize the inherent wisdom of the self-regulating and self-healing ability of the human being and respecting the role of physis.
Outcome 5	To ensure that the participants have a comprehensive understanding of the causes of illnesses.
Outcome 6	To develop the ability to effectively diagnose and treat illness conditions.
Outcome 7	To prescribe and dispense Unani-Tibb medication either on its own or in conjunction with other medication used.
Outcome 8	To evaluate appropriate uses of remedies given contraindications and possible drug-remedy interactions.
Outcome 9	To plan and monitor the management of the governing factors, nutritional therapeutics and regimental therapy programmes.

Outcome 10	To counsel and advise on indicated lifestyle changes.
Outcome 11	To be sensitive to the needs of the patients with respect to treating the patient and not the condition.
Outcome 12	To sustain personal development and learning through continuous professional development and/or research programmes.

3.7.4. Selecting the appropriate training model

After having identified the course outcomes, an evaluation of the different training models available in present day South Africa was necessary so that the appropriate training model could be selected. In summary, the different options were:

• **Teacher to pupil.** This is the time-honoured method, used from the days of antiquity, in which the teacher / doctor transferred knowledge, skills and attitude to the pupils / students / apprentices / learners. In the medical training context, the teacher, mentor or doctor (etymologically; 'doctor' is derived from *docere,* Latin for 'to teach') in the tutorial, classroom, or (occasionally) one-on-one format. Most of the present day medical training is content-based, and is conducted as lectures to groups of students. Transmission is generally top-down, with little, if anything in the way of interaction or debate during the lecture. Interaction with the lecturer is often an 'optional extra' at the conclusion of the lecture. The main goal of this traditional, content-based learning, is the transfer of information from sources such as textbooks and case histories to the students, for their future reference in particular practice situations.

In the medical education context, this teaching process evolved into the establishment of 'schools', where specific centres of excellence originated to espouse one particular medical philosophy or practice - from Hippocrates' School on the island of Cos, Greece, to the medieval medical universities in Sienna and Turin, to the Homoeopathic School in Montmartre, Paris, to the Pasteur Institute (also in Paris) and more recently to the London School of Tropical Hygiene. The original one-on-one Teacher to Pupil concept of training is also prevalent in some African Traditional healing quarters (Hammond-Tooke, 1989).

• **Learnerships.** This education model is a planned learning experience, which combines a structured learning programme with practical development in the therapy environment (National Training Directory, 2003). This process, also known as apprenticeship, is a form of on-the-job training, in which theoretical knowledge gained is immediately and directly put into practical application in the clinical context. This is a particularly powerful training technique for established

healthcare professionals who wish to broaden their medical competence in a different medical paradigm. Apart from the training candidate, a number of other people are committed to the training - course material developers, training provider, assessors, mentors and coordinators.

• **Structured training in a university.** This form of training is well typified by the present training curricula as practiced in the South African universities. In particular, the medical curriculum has embraced this paradigm for decades, even centuries, with periodic adjustments made according to changing needs. However, this traditional education system, which is largely content-based, has raised concerns that it does not prepare learners, including medical students, for actual work in the real world of the clinic, practice or hospital.

• **Learner-centred tuition.** This originated in the 1970's, when there was a strong impetus to place the responsibility to learn on the shoulders of the learners, instead of teaching them directly as in traditional times. This form of training is directed and managed by means of learning objectives, which are arranged in increasing levels of difficulty that must be mastered by the student. Levels of complexity lead from (a) mastering of the relevant knowledge, to (b) comprehension of the subject, to (c) applying the newly-learned material in specific concrete situations, to (d) analysis followed by synthesis of the subject material, to (e) evaluation of the value of the material produced to fulfil a particular requirement (Olivier, 2000).

• **Problem-based learning (PBL)**. This system of learning recognises the need to develop problem solving skills as well as the necessity of helping students to acquire necessary knowledge and skills. The main objective of PBL is to ensure that students, on completion of their course, have acquired the necessary problem solving skills that will be needed in the real world. Thus the main characteristics of PBL which can be used when designing curricula are: (a) a reliance on specifically identified problems to drive the curriculum; (b) the recognition that the problems are truly structured; (c) an emphasis that students solve the problems; (d) an insistence that students are only given guidelines; and (e) based upon an authentic, performance based assessment (Stepien & Gallagher, 1993).

• **Outcome-based learning (OBL).** This system is competency-based, rather than content-based. OBL identifies intended end-results, as opposed to traditional input-based learning (Olivier, 2000).

As the training paradigm adopted in support of this study, OBL is characterised by the following:

(a) It is based on what the participants intend to achieve in their clinical practice, with the Course Modules designed to fulfil this need. It is learner-driven, allowing for feedback to the organizers if specific subjects or techniques have not been covered adequately for the individual participant.

(b) The training focus of OBL lies in the participant acquiring the capability of knowing *what* to learn, and *which skills* to master in order to manage his/her practice.

(c) OBL prepares and develops the abilities of participants to carry out clinical and other procedures.

(d) OBL allows the participant to build up a competence to plan, check the planning with others, assess the ways in which interaction with others occurs, and execute certain tasks in order to achieve it.

(e) Ultimately, OBL enables the participants to plan for intended or expected clinical outcomes, instead of merely going into reactive thinking when a problem emerges.

The OBL format as operated in the training described in this study enables the participants to communicate constructively with each other, and to assess the activities and end-product. The choice of a part-time outcome-based modular training programme was therefore considered as an appropriate model. This choice was based on the fact that there existed a great deal of similarity in the training as mentioned earlier as well as the fact that the additional information to be incorporated into the curriculum was not extensive. The part-time programme was in many ways ideal, as it acknowledged that the participants were in full-time practice, as well as the fact that a one-year period would ensure that the motivation to attend regularly was not diminished. It was thus decided that the chosen model consist of twelve modules over a period of one calendar year, allowing for a contact time of one weekend per month.

3.7.5. Designing the integrative training programme

In the development of the training modules the most important area of concern was ensuring that the philosophical principles of Unani-Tibb had been understood. This was indeed a major challenge, as paradigm shifts in the medical field are not readily achieved. The other concern was the limited availability of course material. The available course material on the philosophy of Unani-Tibb which was obtained from current training institutions such as Hamdard University (Pakistan) and Jamia Hamdard (India) was based on the original text of Ibn Sina's *Canon of Medicine*. This

reference work was not very user-friendly and required extensive time and effort in modifying it so that the participants could grasp the concepts easily.

In addition to the introduction of the philosophical principles of Unani-Tibb, the application of these principles and their evaluation was necessary before the complete integration of the programme could be implemented by the participants. With this in mind, the training programme was designed to have three components, namely:

(1) The philosophy and principles of Unani-Tibb.

(2) The practical clinical application of the philosophy and principles of Unani-Tibb.

(3) The participants' research project.

(1) The philosophy and principles of Unani-Tibb

The main emphasis on modules 1 to 6 was ensuring that the theory of Unani-Tibb was effectively understood to the satisfaction of both participant and programme organisers. The satisfactory completion of specific assignments ensured that the concepts and principles contained within these modules had been fully assimilated. These assignments were for completion in the participants' own time and location, in an open-book situation, and returned to the programme coordinator on or before the day of the next scheduled lecture or workshop.

The following table gives a brief description of the content of each module:

TABLE 5: SUMMARY OF THE CONTENTS OF EACH SELF-STUDY TRAINING MODULE

Module 1: Philosophy of Unani-Tibb	Comparative analysis of Unani-Tibb and orthodox bio-medicine; philosophical principles of Unani-Tibb: concept of creation, the concept of physis; the nature of qualities, temperament and humours; the principles of cause and effect
Module 2: Aetiology	Comprehensive understanding of the concept of 'cause'; governing factors for health and disease: food/drink; environment and toxins; movement and rest; sleep and wakefulness; emotional profiles; elimination and retention
Module 3: Pathology & Diagnosis	Definition of terms; nature of pathology; pathological pathways of temperamental, humoral, structural and functional imbalances, signs and symptoms; diagnosis of disorders; the use of diagnostic technology
Module 4: Therapeutics	Different modes of therapies; rationale behind therapies; laws of treatment; pharmacotherapy; outline of regimental therapies; elimination therapy
Module 5: Pharmacology	Definitions; types of medications utilised in Unani-Tibb; conditions for analogy; constituents of a medication; features of the different classes of medication; materia medica
Module 6:	Temperament and dietetics; the laws of dietetics; application of dietetics; cupping;

Regimental Therapeutics	meditation/breathing; psychotherapy; exercise, counseling.

In addition to the completion of each module, the following practical exercises were included to ensure that the concepts covered in each module were fully understood:

TABLE 6: PRACTICAL EXERCISES ASSOCIATED WITH MODULES 1 TO 6

Module 1	Interview 50 patients/friends/family and identify dominant and sub-dominant temperament.
Module 2	Design four lifestyle management programmes for two healthy patients and two patients who are ill.
Module 3	Review 20 patients to determine the qualitative frame of the illness condition and interpret the causes of illness.
Module 4	Complete 10 case studies using appropriate therapeutic approaches (excluding medication) to treat the illness condition.
Module 5	Complete 10 case studies using appropriate therapeutic approaches (including medication where necessary) to treat the illness condition
Module 6	Complete 10 case studies using regimental therapies as a treatment option, at least 2 cases using cupping and 2 cases with clearly defined dietetics.

As a further measure to ensure that the concepts were fully understood, an examination was conducted after the completion of Module 6, which all participants had to pass in order to proceed to the second half of the programme.

(2) The practical clinical application of the philosophy and principles of Unani-Tibb.

The second half of the programme (Modules 7 to 11) encompassed illness conditions affecting different systems of the human body from the Unani-Tibb diagnostic and treatment perspective. This was based upon the philosophical principles covered in the first half of the programme. These modules transferred the theoretical principles of Modules 1 to 6 into the practice of the participants, thereby initiating the integration of Unani-Tibb into their professional activities.

A brief description of the contents of Modules 7 to 11 is listed below:

TABLE 7: SUMMARY OF THE CONTENTS ASSOCIATED WITH MODULES 7 TO 11

Module 7-11: Illness Management	Each deals with a representative range of specific clinical ailments with a problem-based approach. Anatomy and physiology according to the allopathic or orthodox perspective and Unani-Tibb within the concept of temperament, structure and function; aetiology and diagnosis of the condition; further investigations; general management; pharmacotherapy, especially with natural remedies; application of the governing factors and regimental therapies.

In order to ensure that the practical application of the contents of modules 7-11 were fully understood, the participants had to submit five comprehensive case studies per module (a total of 25). Fifteen of these case studies had to deal with chronic conditions, and ten on acute conditions.

The requirements for the case studies were as follows:

- A submitted Personality Evaluation Form (from Module 1) to confirm dominant/ subdominant temperament.
- A detailed Medical History of the patient.
- Aetiology: comments from the patients as to the cause of his/her illness condition (to ensure patient participation). A direct enquiry/review of the patient's management of governing factors (to cover information of all six factors and, where applicable, other factors such as occupation and environment).
- Diagnosis: the patients' signs and symptoms, presenting complaints and clinical observations, which together are indicative of the overall temperament frame associated with the patient at the time of the visit. This section also included patient input as to his/her reasons for the condition.
- Pathology: in this section the participant is asked to interpret the pathological process from the Unani-Tibb perspective, with reference to the underlying causes of the illness condition.
- Treatment management:
  - Temperament frames to be used
  - Lifestyle changes using governing factors, with special attention on recommended dietary guidelines
  - Recommended regimental therapies
  - Details of medication (preferably Unani-Tibb)

- Outcome and comments: meaningful outcomes in chronic patients could only be achieved if their treatment extends for at least 4-8 weeks. Acute conditions could be assessed earlier. The conclusion had to include a personal comment on the final outcome, and on the effectiveness of applying Unani-Tibb principles.

(3) The participants' research projects

Module 12, the participants' research projects, was developed to assess whether the participants had assimilated the principles of Unani-Tibb, starting with aetiology, and concluding with treatment. The participants carried out a comparative analysis of a specific clinical disorder from the Unani-Tibb perspective and orthodox bio-medicine (or homoeopathic) perspective. The research project measured three outcomes: (1) clinical benefit; (2) cost benefit; and (3) Quality of Life.

The planning of the participants' research projects was of special significance as it was the ultimate measure of the understanding of the programme as well as the measure of the benefit of the programme to the participants and the patients. The processes involved for completing this task included the following:

Allocation of research topics

The allocation of the research project was done through consultation with the individual participants.

Obtaining ethical approval

Ethical approval for the research project was obtained from the Ethics Committee of the University of the Western Cape. The ethics approval had to comply with all the requirements of confidentiality with the understanding that the patient could withdraw from the study at any time without explanation. (The application for ethical approval is attached as *Appendix III*).

Research project design

The projects were undertaken and completed by the participants. They were based on an evaluation of one of the illnesses selected from Modules 7-11 from the Unani-Tibb perspective. This was considered to be an accurate assessment of the participants' understanding of the various causes of the illness and its management, compared to causes and treatment from an orthodox bio-medicine or

homoeopathic discipline perspective. The comparative research project paid special attention to effectiveness, affordability and to the patient's Quality of Life.

Each student was expected to complete a specific project on a particular clinical situation which was relevant to his or her present circumstances or practice. The project was guided and advised by the lecturers/facilitators responsible for this aspect of the programme.

Guidelines for participants' research projects

The guidelines for each project included the following:
(a) Mutual agreement was arrived at, on identifying a clinical disorder which was considered appropriate for the participants' Research Project.
(b) The Research Project was supported by a format provided by the Institute, and any reasonable required materials or related case histories, which were deemed appropriate for the participant and the Research Project, were also provided.
(c) The Research Project was expected to be represented as a comparison of the Unani-Tibb management of the suggested clinical disorder with the orthodox bio-medical approach. The components included: cause and risk factors, symptoms, diagnosis, investigations and treatment.
(d) This activity was expected to generate a comparative Unani-Tibb and orthodox bio-medicine or homoeopathic profile in terms of effectiveness, affordability and Quality of Life criteria.

The feedback requested from patients included the following:
(a) Biographical data – to evaluate the demographics of the patients assessed.
(b) First consultation – to record the patient's personal details, temperament, medical history, presenting signs and symptoms, aetiology, clinical examination results, diagnosis and treatment.
(c) Patient follow up visit questionnaire – to evaluate compliance and feedback.
(d) A Quality of Life survey – to compare Quality of Life before and after treatment. This was achieved by use of a customised form.
(A specimen of the above forms are attached in *Appendices IV, V, VI* and *VII*)

Summary of modules

The modules were specifically constructed for the integrative training programme. They were prepared using extensive input from experienced Unani-Tibb practitioners, and included material derived from numerous published clinical texts on which Unani-Tibb is based. They were capable of modification if a particular need was uncovered during the first facilitation of the programme.

The design of the programme reflected an approach which integrated the technology of orthodox bio-medicine with the philosophical principles of Unani-Tibb. This approach ensured that the current application of orthodox bio-medicine could still be used by the participants to complete their diagnosis in line with the current terminology (names) of the illness conditions. This approach was consistent with the application of modern diagnostic techniques, which provide accurate diagnoses derived from the patient's signs and symptoms, biochemical tests, and imaging techniques. The actual interpretation of the diagnosis with respect to the aetiology and pathological processes could then be understood effectively by applying the philosophical principles of Unani-Tibb.

Clearly defined outcomes were identified and listed for each module, to ensure focus and to confirm that the Unani-Tibb principles were encompassed satisfactorily. The contents of each module were researched from available curriculum material generously supplied by Hamdard University, Pakistan, the Central Council of Indian Medicine (CCIM) and Jamia Hamdard, India. Other reference material, referred to earlier, was also sourced.

3.7.6. Pedagogic aspects of the programme

As the participants were all mature students, with time constraints, the programme had to be well structured and yet informal, allowing for interaction. This is why the following pedagogic styles were chosen:

Participant feedback

This was essential, especially in the pilot phase, in order to evaluate whether the needs were being satisfied and the objectives of the programme were achieved. If not, then appropriate remedial action was suggested. These mechanisms, targeted at the participants, were to assess whether their personal needs were being met, as well as whether the programme was successfully enhancing their understanding of treatment.

During the programme, the participants were invited to give their feedback regarding (a) their capacity to understand the basic philosophy of Unani-Tibb with respect to governing factors and the maintenance of health; (b) the causes of a range of diseases; (c) the diagnostic processes employed; and (d) the various therapeutic interventions available.

This evaluation of the programme was assessed by use of a customized form. A specimen of this is presented in *Appendix VIII*.

Presentations

At the commencement of each session, brief verbal presentations (approximately 10 minutes in duration) on topics relevant to the Module previously covered were invited from the participants. The presentation was a feedback of the practical homework relating to the previous module. Each presentation by the participant was followed immediately by open discussion and analysis by other participants in the class, actively guided by the facilitator.

Group discussions and lecturer / facilitator feedback

Interactive feedback sessions were held in a suitable period of time at the beginning of each module. Topics covered included any difficulty in understanding the module, additional material requested by the participants, and any organizational difficulties.

3.8. Implementing and administering the programme

3.8.1. Recruitment procedures

A number of routes were followed to bring the details of the programme to healthcare professionals who were likely to be interested. The main one employed was through advertisements placed in local mainstream medical, clinical, or nursing magazines or journals. The word-of-mouth route also proved to be an important source of enquiries.

The criteria for selection and acceptance was an established practice as either orthodox doctor, homoeopath, or primary healthcare nurse, and proven competence in the candidate's stated healthcare field. The responsibility for actual selection, interviewing, reference checking and

registration was allocated jointly to the administrators of the programme. On the basis of this process a total of 24 participants were recruited in 2003.

3.8.2. Orientation

The introduction of the participants to the programme, communication routes, present and expected problems, general 'housekeeping', personal introduction to contributors, and similar matters were explained and discussed.

3.8.3. Modules

The module outlines were handed to the participants at their attendance at the particular lecture. If the participant was unable to attend for one reason or another, the module outline was sent via the best postal option.

3.8.4. Collection of assignments and practical exercises

All assignments completed by the participants were handed in at the subsequent training session. If a participant was unable to attend a specific training session, then the assignment was either posted or handed in at the next contact session.

3.9. Evaluation of the programme

3.9.1. Internal evaluation

During the diploma programme the quality assurance aspects needed to be planned in order to assess and continually monitor the benefits to the participants. In addition, the programme needed to be externally moderated, not only to provide objective credibility, but also to ensure that it met international standards. The following aspects ensured that the above quality assurances occurred:

Assignments

The assignments were selected and allocated by the programme organisers. The evaluation exercises were customised for each weekend lecture, based on the specific module covered at that lecture, so that competence could be assessed regarding understanding of the core information contained within the module itself.

As previously mentioned the assignments were completed in the participants' own-time and in an open book situation, and returned to the course administrator on or before the day of the subsequent lecture. The assignments were evaluated and marked against an agreed marker profile developed by the course administrator, and the results documented. If a participant scored markedly poorly, then the situation was discussed informally with the participant, to determine whether the problem arose from content or language, or for some other reason. Once identified, action was taken to resolve the problem. Participants were encouraged to discuss any misgivings with facilitators at any time throughout the duration of the programme.

Practical homework / case studies

Feedback and review of the practical homework of each module was conducted at the beginning of the next module in the form of presentations by the participants. This feedback reflected the participants' understanding of the Unani-Tibb principles and their ability to integrate these principles into their practice.

Mid-year examination

A mid-year examination (June) was conducted to assess the level of the participants' understanding of the first six modules of the course. It was imperative that the participants understood the philosophical principles of Unani-Tibb prior to commencing with modules 7-11. This examination also gave an indication of how easy or difficult it was for the participants to implement Unani-Tibb into their current practice.

Questionnaires for feedback

The extent to which the needs of the participants had been met were evaluated before, during and after the programme by means of customised questionnaires. These were developed in order to assess the participants' attitude to the programme, and to gauge its overall value.

The questionnaires consisted of:
(a) An assessment of their motivation to enrol on the diploma programme *(Appendix II)*.
(b) Written feedback from participants after completing Module 8 *(Appendix VIII)*. Feedback at this stage was considered appropriate as enough time had passed to assess whether the participants fully comprehended the philosophical principles and to what extent they had implemented it.

(c) A concluding global evaluation, four months after completion of the programme (see *Appendix IX*).

3.9.2. External moderation of the programme

The external moderation of the programme was carried out by Hamdard University, Pakistan with whom UWC had entered into a Memorandum of Understanding (MoU) in January 2003.

The June examination paper was drawn up and sent to Hamdard University for assessment and comment by the external moderator, to ensure that the paper was on par with international standards.

A representative sample (10 out of 24) of the examination scripts and research projects were sent to Hamdard University (Pakistan) for external moderation.

3.10. Ethical aspects of the research

This proposed study involved the active and willing involvement of patients who were aware that they were free to discontinue their involvement in this study, without prejudice.

There was no involvement that could expose the participants to physical or mental trauma. All demonstration of diagnostic or therapeutic techniques were preceded by a full explanation of the practice, involvement, outcome and consequences of the technique. At no stage in this proposed study were animals from any species used in the demonstration of Unani-Tibb techniques, or in the preparation of materials considered relevant to the study.

3.11. Summary and conclusion

The complexity of this section on the research methodology and the programme design employed in the study reflects its extensive and wide ranging nature. On the one hand there was the investigation into the possibility of introducing the concepts and practice of Unani-Tibb into the South African healthcare education environment. This aspect involved the preparation of a series of dedicated self-study training modules, in which the basic philosophical principles and theories of life science were

introduced. The importance of accurate and painstaking diagnosis of clinical disorders in the context of the sufferer's temperament was embodied in the modules, together with the Unani-Tibb approach to the management of these conditions. These modules included a series of lectures which were used to initiate a selected range of professional, practicing healthcare practitioners. Extensive feedback and evaluation processes were introduced to ensure that the stated performance outcomes were achieved.

On the other hand, the programme included the organisation, logistics, execution and evaluation of each participant's allocated research project. This process was used to explore the practical impact and value of applying the Unani-Tibb model of healthcare in a true clinical setting. This exercise was designed to gain some qualitative and quantitative insight into the actual application of Unani-Tibb in a series of clinical conditions.

The interpretation of the results of both of these components of the programme are detailed in the following chapter.

CHAPTER FOUR

Presentation of Results

4.1. Introduction

This chapter will provide and interpret the results of the various aspects of the research study. Included will be aspects pertaining to the status of healthcare in the country, the deficiencies that exist within orthodox bio-medicine as well as the assessment of the integrative programme.

The interpretation of the results will be a measure of the extent to which the aims of the study have been achieved. To reiterate - the aims of the study were to assess whether the concepts of Unani-Tibb could be integrated into a training programme for orthodox healthcare professionals, and whether the integrative programme could assist in the provision of effective, affordable and appropriate healthcare in the South African context.

The tabled results will include the various questionnaires used in the study, as well as the results of the June examination and the participants' research project.

The results described in this chapter will be followed by an extensive discussion in Chapter Five, which will review these results and their interpretation within the overall context of the research.

4.2. Results of the questionnaires

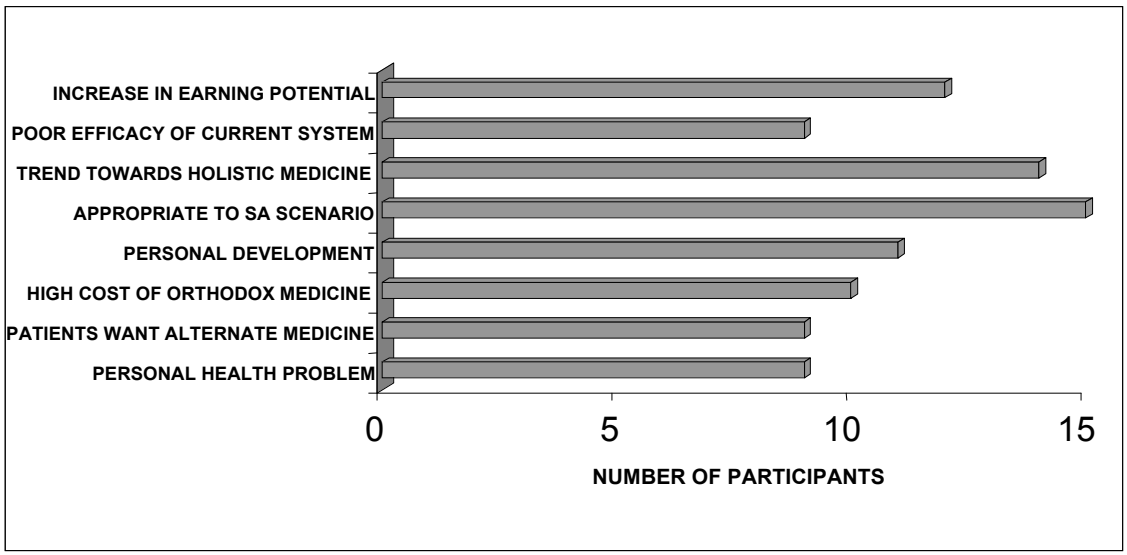
The questionnaires issued to, and completed by, the participants of the integrative training programme included: (a) the motivation for enrolment in the Diploma programme; (b) participant feedback during the programme; and (c) participant feedback after completion of the programme.

4.2.1. Motivation for enrolment on the Diploma Programme

The objective of this questionnaire was to ascertain the reasons why prospective participants decided to apply and enroll for the programme. The reasons covered general areas such as self-development, disillusionment with their present medical practice, awareness of the trend towards holistic medicine, interest in complementary medicine as a whole, and in order to provide an additional service to their patients.

An analysis of the returned completed questionnaires, numbering 24 in total, revealed that the most important reason was because of an awareness of the shift from orthodox bio-medicine towards other holistic medical systems.

Figure 2: MOTIVATION FOR ENROLMENT IN THE DIPLOMA PROGRAMME



The perception that complementary/holistic medicine in general is becoming more appropriate to the South African medical scenario was expressed by 15 of the participants who chose this reason as their second choice. The third position was occupied by a desire to increase their earning potential (12 participants), followed closely by increasing personal academic or clinical self-development which was close behind in the fourth position (11 participants).

From this we can infer that some orthodox and allied practitioners are becoming uncomfortable with the present contribution of orthodox bio-medicine to the South African healthcare system. Notably, the escalating cost of basic health services, now virtually non-affordable for a sizeable majority of the population, has encouraged many to seek alternative forms of healthcare that can cater for their patients more adequately. This is demonstrated in the response to this questionnaire where the majority of participants (10) chose the high cost of orthodox bio-medicine as their fifth choice. Other reasons put forward for doing the programme (by 9 participants) were: the low rate of efficacy of the present system, and interest being expressed by their patients. Finally a number of participants (9) were motivated by a personal health problem which had not responded hitherto to orthodox or any other medical care.

When the results of this questionnaire were analyzed into 'doctor' and 'nurse' groups there was a noticeable difference in the hierarchy of motivational factors (compare *Figures 3 and 4* below).

Figure 3: DOCTORS MOTIVATION TO DO THE PROGRAMME

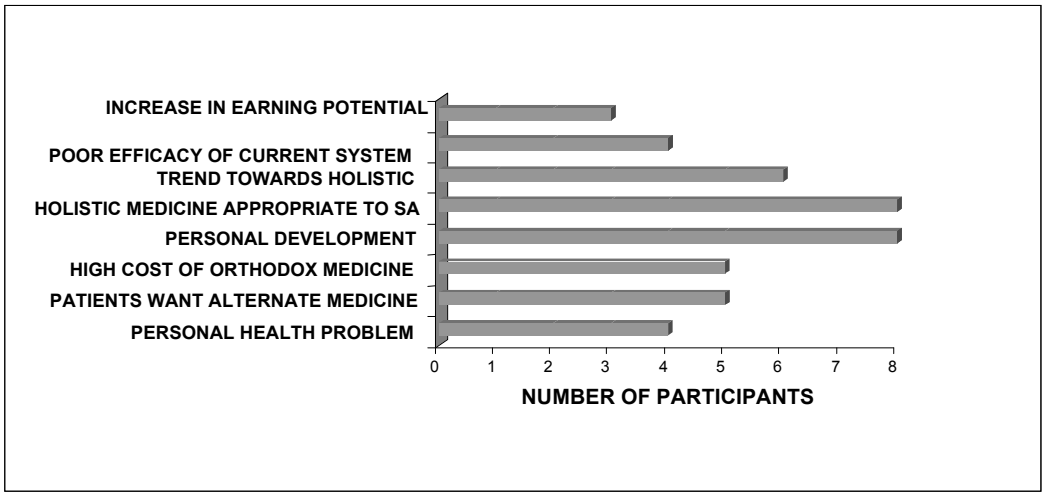
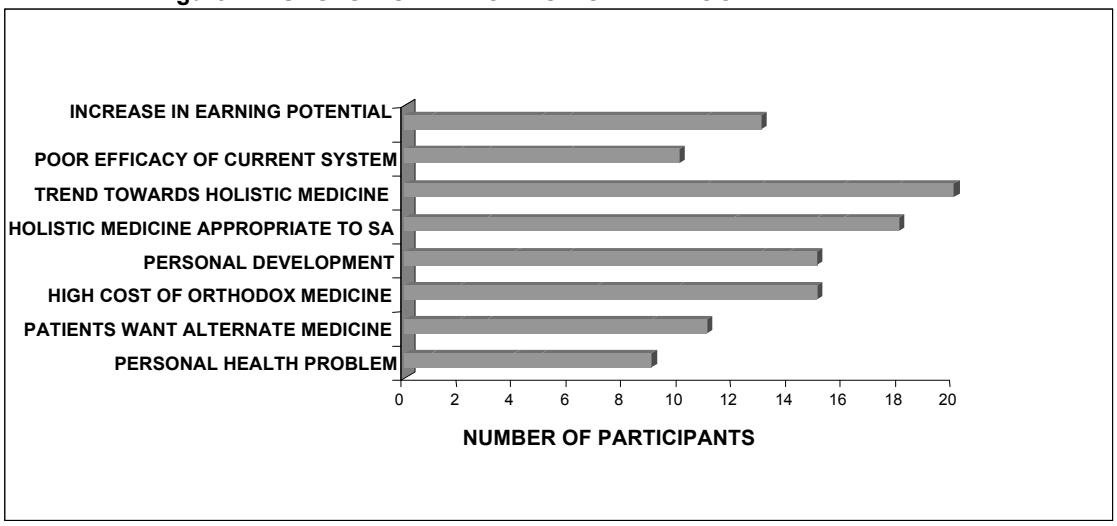


Figure 4: NURSES MOTIVATION TO DO THE PROGRAMME



The 'doctors' group, for instance, was motivated by the need for a holistic approach which was more appropriate for South Africa, together with personal development, as being the most important motivations. In contrast, the 'nurses' group related more to patients needs, recognizing the lack of fulfilment of orthodox bio-medicine, and an awareness of the move towards complementary or holistic healing. This was followed by a perceived need for a holistic approach which is more appropriate for South African needs.

From the information above it is apparent that there were a variety of reasons motivating participants to enrol for the course. However, the two most important ones registered were (a) the

recognition of the move away from the orthodox bio-medical model to a more holistic approach; and (b) the recognition by the participants that the orthodox bio-medical model is not entirely appropriate to the South African scenario.

4.2.2. Participant feedback during the programme

The reason for the questionnaire during the course of the programme was to detect any shortcomings which surfaced at this stage, so that corrective action could be taken timeously before completion of the programme. The objectives of this questionnaire were, firstly, to obtain specific feedback on each of the first six philosophy modules, and secondly, to obtain feedback on aspects of the integration of Unani-Tibb into their practice. The latter included three of the five illness management modules which had been covered by this time.

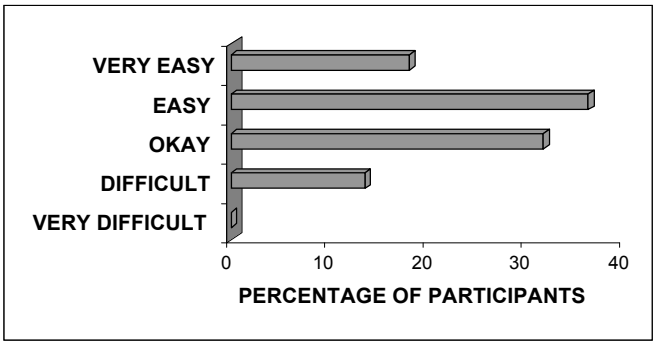
This questionnaire comprised three parts. The first part was devoted to feedback on the understanding of the principles of Unani-Tibb completed by August 2003. The second part dealt with the integration of Unani-Tibb into the practice of the participants (up to August 2003). The third part was designed to ascertain what benefits the programme had brought to the participants and their patients. Of the 24 participants, 22 completed the questionnaire.

Understanding the principles of Unani-Tibb

With regards to the understanding of the principles of Unani-Tibb there was general agreement that the modules customized for the programme posed no real problems of understanding. The results of modules 1-6 are presented in the graphs below, with a summary of the results obtained listed.

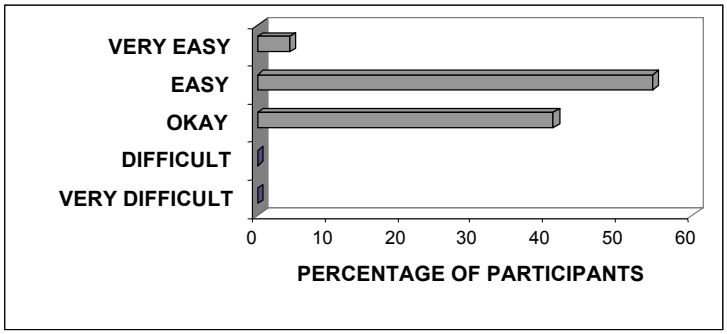
The results of Module 1, on the *Philosophy of Unani-Tibb (Figure 5),* reveal that 54% (12) of the participants found the module 'easy' to 'very easy', 14% (3) found it difficult, whilst 32% (7) found it 'okay'.

Figure 5: MODULE 1 - PHILOSOPHY OF TIBB



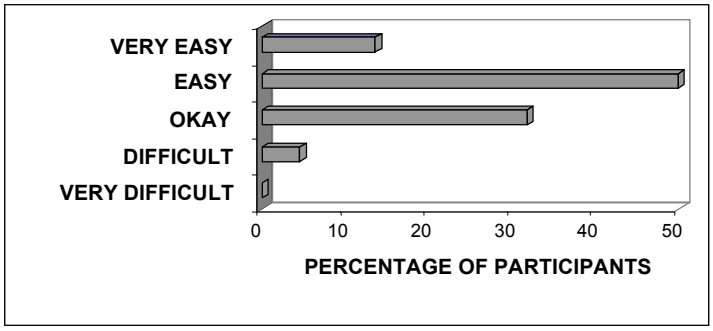
The results of Module 2, on *Aetiology from the Unani-Tibb perspective (Figure 6),* reveal that 55% (12) of the participants found the Aetiology module 'easy' and 5% (1) found it 'very easy'. No one found it difficult but 40% (9) found it 'okay'.

Figure 6: MODULE 2 - AETIOLOGY



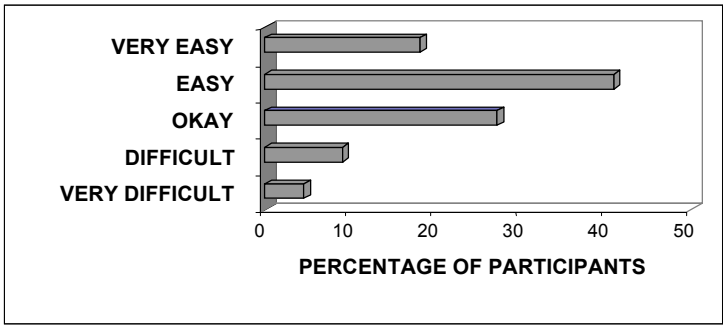
The results of Module 3, on the subject of *Pathology & Diagnosis (Figure 7),* reveal that 96% (21) of the participants collectively found the module on Pathology and Diagnosis 'okay' to 'very easy' with only 5% (1) finding it 'difficult'.

Figure 7: MODULE 3 - PATHOLOGY & DIAGNOSIS



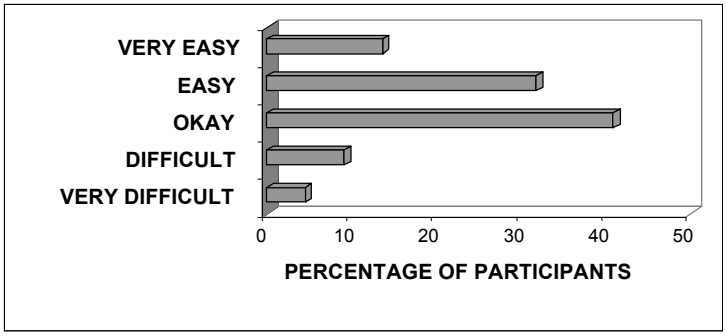
The results of Module 4, on *Therapeutics (Figure 8),* reveal that 14% (3) of the participants had difficulty with the module on Therapeutics with 59% (13) finding it 'easy' to 'very easy'. The balance of 27% (6) found it 'okay'.

Figure 8: MODULE 4 - THERAPEUTICS



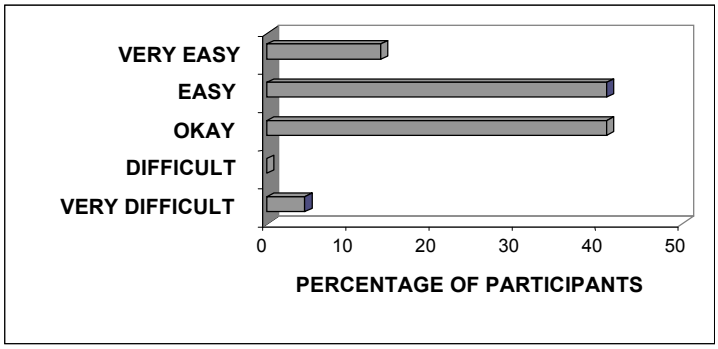
The results of Module 5, dealing with *Pharmacology in Unani-Tibb (Figure 9),* reveal that 46% (10) of participants found it 'easy' to 'very easy', compared to 41% (9) who found it 'okay'. Of the remaining responders, 9% (2) found it 'difficult', and 4% (1) found it 'very difficult'.

Figure 9: MODULE 5 - PHARMACOLOGY



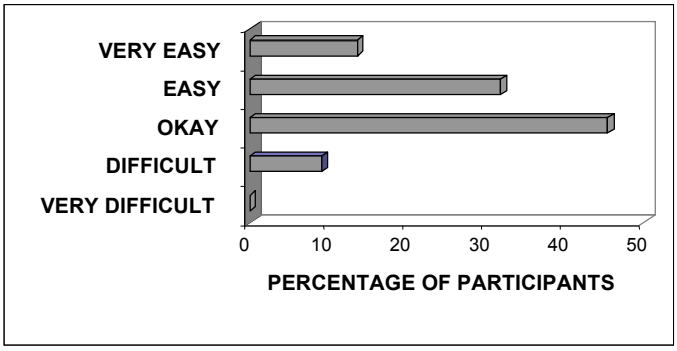
The results of Module 6 on *Regimental Therapies & Dietetics (Figure 10),* reveal that 55% (12) of the participants found the module 'easy' to 'very easy', with 41% (9) who found this module 'okay'. Of the remaining, 5% (1) found it 'very difficult'.

Figure 10: MODULE 6 - REGIMENTAL THERAPIES & DIETETICS



The results from *Modules 7, 8 and 9 on the Illness Management (Figure 11),* reveal that 32% (7) of the participants found these particular illness management modules 'easy', with an additional 14% (3) finding it 'very easy'. In the remaining responders, 45% (10) found it 'okay' with only 9% (2) finding 'difficulty' with these modules.

Figure 11: MODULES 7 TO 9 - ILLNESS MANAGEMENT



From the above results it is noteworthy that the therapeutics, pharmacology and regimental therapies were the only modules mentioned that were considered very difficult by a number of respondents (5%). The therapeutic and regimental therapies were clearly new to the participants, so their implementation understandably presented some difficulty. The pharmacology module was also largely novel to the participants' thinking, as it described various herbs with which they were largely unfamiliar, their combinations in various formulations, and the usage of potent medications

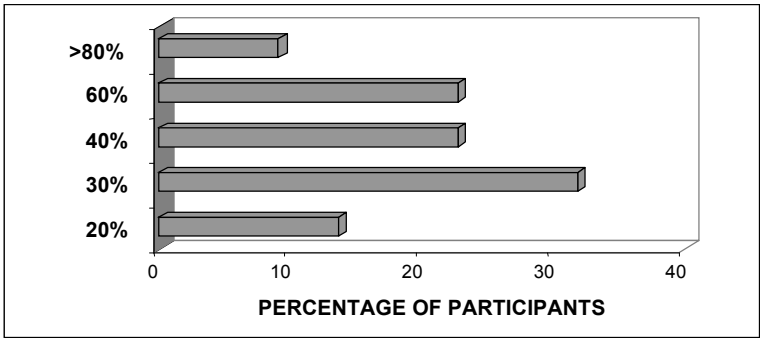
such as opium and arsenic. This obviously required a substantial mindset adjustment. However, as only 5% of the participants considered this particular module to be very difficult, this was considered a somewhat positive response. More significant, perhaps, was the fact that none of the participants found the information contained in the modules dealing with Philosophy, Aetiology, and Pathology and Diagnosis (which essentially provide the foundation of the Unani-Tibb philosophy) very difficult.

Integration of Unani-Tibb into practice

The second part of the questionnaire dealt with the extent to which Unani-Tibb had been integrated into the practice of the participants. This embraced (a) the employment/working conditions allowing for the integration; (b) the ease and comfort of this integration; (c) whether the patient profile allowed for integrating Unani-Tibb protocol; and (d) which components of the programme were the easiest to integrate.

The results obtained are depicted in *Figure 12*. Findings show that 2 participants stated that they could integrate Unani-Tibb into their practice by more than 80%, with a further 5 participants revealing a 60% integration. However, another 5 participants stated only a 40% integration, with an additional 7 declaring 30%. Of the 22 responders, only 3 stated that they will be able to integrate around 20% into their daily practice.

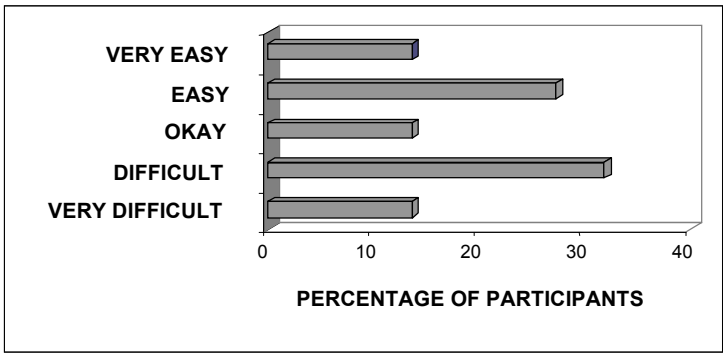
Figure 12: EXTENT OF INTEGRATION



The spread of integration levels submitted in response to this question was somewhat predictable at this stage of the programme. The participants had at this stage completed the theoretical aspects, and were only beginning to integrate the orthodox and Unani-Tibb medical paradigms. The question of the success of the integration *after* the completion of the course provided a more accurate assessment. Those comparative figures are presented later in this chapter.

The results of whether the *employment/working conditions* allowed the participants to make changes in their practice was highly relevant, as this obviously has a direct influence on the extent of the integration. The results obtained *(Figure 13)* was that 14% (3) of the participants found it 'very difficult'; 32% (7) found it 'difficult'; 14% (3) found it 'okay'' with 27% (6) finding it 'easy' and 14% (3) finding it 'very easy'.

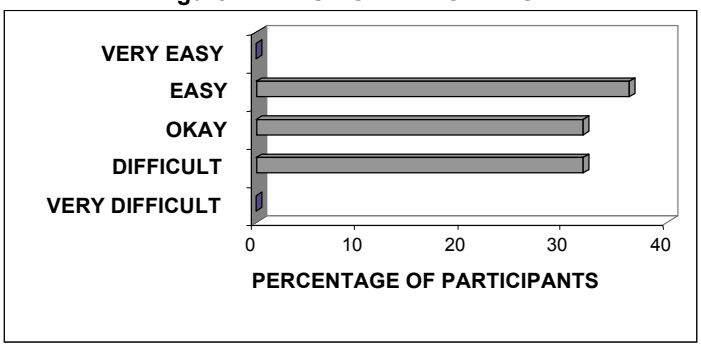
Figure 13: EMPLOYMENT/WORKING CONDITIONS



The wide distribution of results was attributed to the fact that 46% of the participants did not have their own practice, as they worked in hospitals, clinics or other government organizations. This made it difficult for them to implement Unani-Tibb when located in a system that is governed by a largely orthodox bio-medical system. This was unfortunately one of the unavoidable difficulties that these participants experienced.

The results of the *ease of integration* measured how effortless, or otherwise, was the integration that occurred for both participants and their patients. The results obtained *(Figure 14)* indicated that the degree of ease was reflected in a relatively equal distribution between 'easy' in 36% (8 responses), 'no real problems' in 32% (7) and 'difficult' in 32% (7).

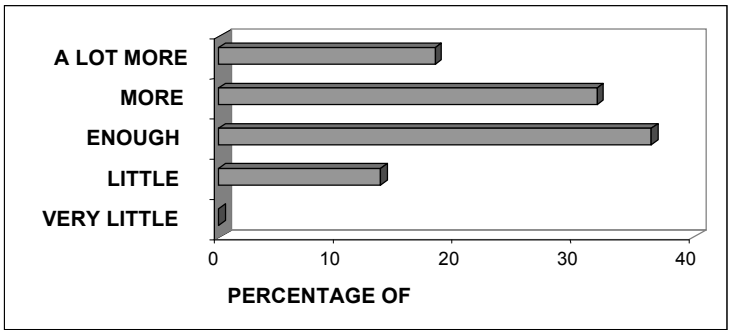
Figure 14: EASE OF INTEGRATION



It is obvious that for those participants already established in their own practice, this integration was easy. On the contrary, those participants who were limited by employment constraints to a greater or lesser extent found that this integration was difficult.

The results of the *comfort with implementation* were a measure of how comfortable the participant was in integrating Unani-Tibb into their practice. The results obtained *(Figure 15)* reveal that 18% (4) of participants stated they were a 'lot more' comfortable with the integration, 32% (7) stating 'more', 36% (8) stating 'enough' and 14% (3) commenting that they experienced 'little' comfort with integration. No participant stated that they had 'very little' comfort with the integration process.

Figure 15: COMFORT WITH IMPLEMENTATION

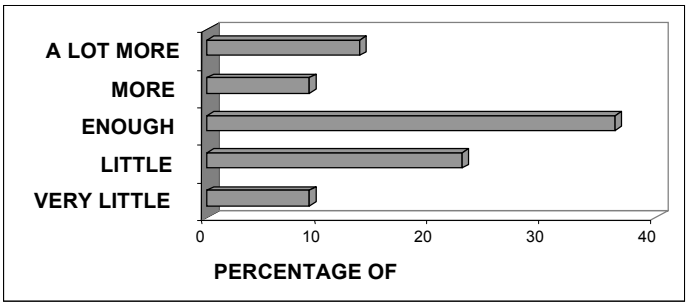


These results once again reveal the potential synergy between Unani-Tibb and orthodox bio-medicine in that overall the majority of the participants felt comfortable with the integration.

A reasonable measure of the patients' attitude towards Unani-Tibb integrated into their treatment was obtained through the next assessment. The participants were asked whether or not the *patient profile* allowed the participant to apply the integrative approach. This was particularly important as it generally needed commitment to marked lifestyle changes.

The results obtained *(Figure 16)* indicated that 'very little' integration was reportedly allowed by patients by 9% (2) of participants, 'little' in 23% (5); 'enough' in 36% (8); 'more' in 9% (2); and 'lot more' in 14% (3).

Figure 16: PATIENT PROFILE ALLOWED CHANGE

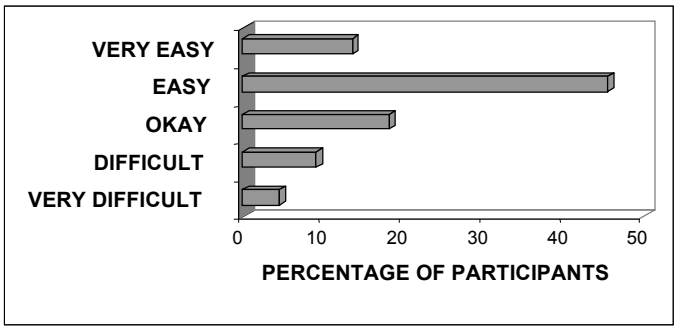


The broad spectrum of results obtained suggests that many patients would like to take charge of their health and well-being. On the other hand, there are a marked number of patients who are not prepared to commit themselves to such lifestyle changes, which include adjustments to their dietary regime, more physical exercise, and other activities which they perceive as unnecessary, unrealistic or even unpleasant. The range of responses probably reflects the many different patient profiles encountered in this type of practice. Again, it should be borne in mind that the integrated approach embodied in Unani-Tibb was relatively new, and an adjustment period for both participants and patients may be necessary.

The participants were asked to rate whether *incorporating governing factors* - dietotherapy, regimental therapies, medication and others - were acceptable to their patients and could therefore be considered for regular inclusion in their practice.

The results *(Figure 17)* reveal that 14% (3) of the participants felt it would be 'very easy'; 45% (10)'easy'; 18% (4) 'okay'; 9% (2) 'difficult'; and 5% (1)'very difficult'.

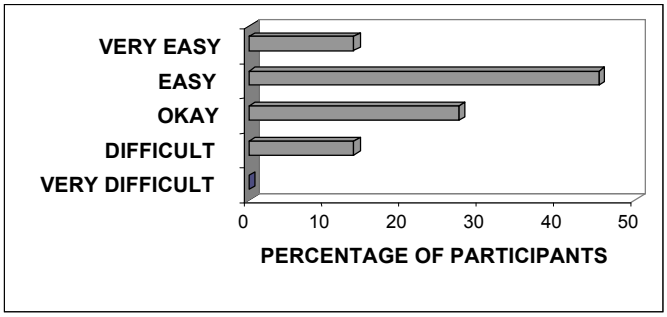
Figure 17: INCORPORATING GOVERNING FACTORS



It is interesting to note the correlation between the above results and those from the previous patient profile study, in which some patients were willing to make major lifestyle changes with regards to exercise, meditation, and diet, and others were not.

The results obtained from *incorporating dietotherapy (Figure 18)* was that 0% (0) found it 'very difficult'; 14% (3) found it 'difficult' with 27% (6) finding it 'okay'. The remaining 45% (10) found it 'easy' with 14% (3) who found it 'very easy'.

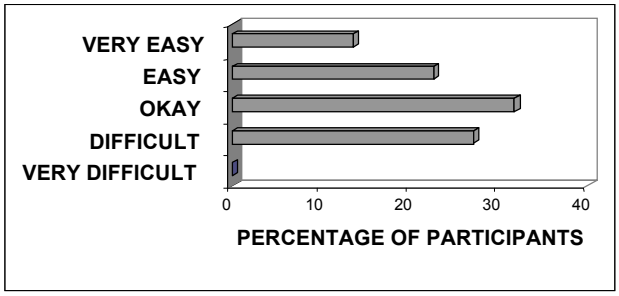
Figure 18: INCORPORATING DIETOTHERAPY



From this it was deduced that whilst a major change in diet may be difficult to make, the majority of patients found the adjustment required by a Unani-Tibb diet was not very difficult. This could be attributed to an important concept regarding temperament in dietetics, which allows for the consumption of most food components (proteins, carbohydrates and fats) in moderation. In most patients, vegetarians and non-vegetarians, these dietary changes were not overly difficult.

The ease with which *incorporating regimental therapies* into the participants practice was estimated *(Figure 19).* Again, there was a relatively wide spread of responses. 'Very difficult' was reported by none; 'difficult' by 27% (6); 'okay' by 32% (7); 'easy' by 23% (5); and the remaining 14% (3) found it 'very easy'.

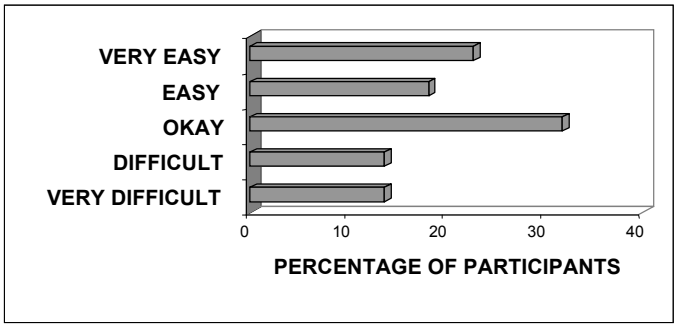
Figure 19: INCORPORATING REGIMENTAL THERAPIES



Although the regimental therapies of Unani-Tibb do in fact cover an extensive range of interventions (purgation, diuresis, cupping, hydrotherapy, and massage) the regimental therapy applied by the students was mainly cupping. This procedure was reasonably well received by the patients - especially those who were familiar with the procedure, and came with positive cultural influences. For example in the African community the art of cupping is a well accepted form of therapy that has been practiced by their ancestors. This made it relatively easy for the practitioners to incorporate it into their treatment.

In a similar assessment, the results obtained from *incorporating Unani-Tibb medication (Figure 20)* was that 14% (3) found it 'very difficult'; 14% (3) found it 'difficult'; 32% (7) found it 'okay'; 18% (4) found it 'easy' and 23% (5) found it 'very easy'.

Figure 20: INCORPORATING MEDICATION



The varied response of the participants' inclination to introduce Unani-Tibb medication was partly due to the lack of availability of Unani-Tibb medication for many of the illness conditions. In

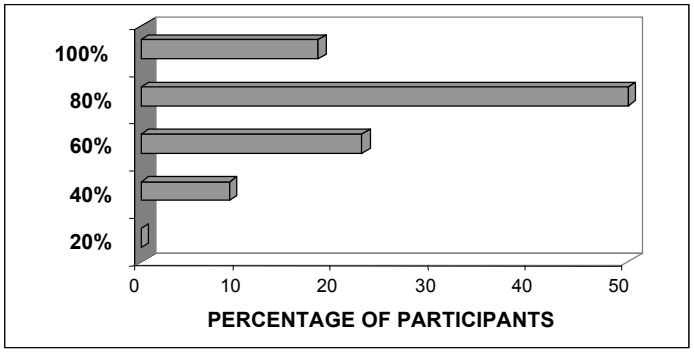
addition, many of the participants were hesitant to change some of the patients who were on chronic orthodox bio-medication. Suitable protocols for substituting the Unani-Tibb medication for orthodox medication were prepared to overcome this problem. The success of this change-over, as we will deal with in a later section, was evident in the research project, where chronic conditions such as hypertension, diabetes, arthritis, were managed.

Benefits of Unani-Tibb for the participant and the patient

The third part of the questionnaire was designed to ascertain to what degree Unani-Tibb had benefited both participants and patients. For the participants this related to pathological processes, specifically the causes of illnesses, as well as increased confidence to diagnose and treat. The benefit of understanding the causes of illnesses, diagnosis and treatment was one of the most important needs of the programme, and was re-evaluated after the completion of the programme as well.

The results obtained from the *understanding of pathological processes (Figure 21)* indicated that 9% benefited up to 40%; 23% up to 60%; 50% up to 80%; and finally 18% stated that they benefited up to 100%.

Figure 21: UNDERSTANDING PATHOLOGICAL PROCESSES

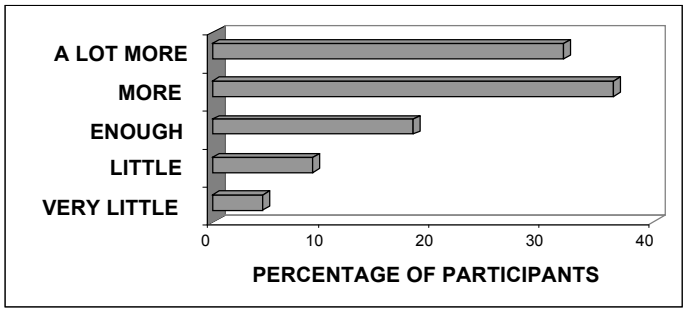


These interim results indicated an overall improved understanding of the pathological processes underlying the causes of diseases. These results will be discussed in the context of the results obtained after the completion of the programme.

The results obtained from the benefit of increased *confidence to diagnose and treat (Figure 22)* was that 9% (2) stated that their confidence improved ‘very little’, with 5% (1) stating ‘a little’ benefit.

18% (4) stated that the course provided them with 'enough'; 36% (8) felt 'more' confident and 32% (7) felt 'a lot more' confident.

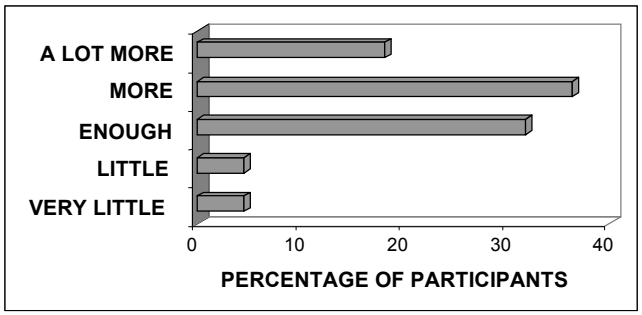
Figure 22: CONFIDENCE TO DIAGNOSE AND TREAT



These interim results show an overall improvement in confidence to diagnose and treat. They will be discussed in conjunction with the results obtained after the completion of the programme on page 134.

The results obtained on perceived *changes in the patients (Figure 23)* was that 10% (2) found only 'very little' to 'little' change in their patients. 32% (7) noted 'enough' changes and 54% (12) of the participants stated that there was 'more' to 'a lot more' changes in their patients.

Figure 23: CHANGES IN PATIENTS



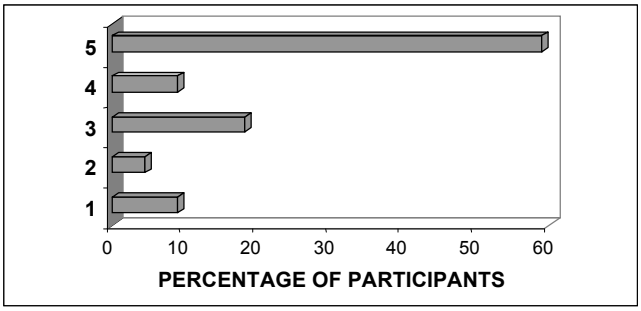
This highlights the important aspect of Unani-Tibb in the involvement of the patient in the healing process. It was therefore essential to assess whether there was any substantial changes in the patients being treated by the participants in terms of attitude and response. As reflected above (Figure 22) the majority of the participants saw changes, for the better, in their patients.

The last section of the participants' questionnaire was designed to assess the extent to which they would be able to integrate Unani-Tibb into their practice on completion of the programme. The

objective of this question at this stage of the programme was to gauge the accuracy of their predictions, and would also provide a measure of their commitment to the integration.

The results obtained on the predicted *extent of integration (Figure 24),* ranged widely. Of the participants, 9% (2) considered that they could only integrate to the extent of 10%; 5% (1) considered 30% integration as a possibility; 18% (4) stated 50% possible integration; a further 9% (2) stated 70% possible integration; and with 59% (13) stating that they will be able to integrate 90% of Unani-Tibb into their practice.

Figure 24: EXTENT OF INTEGRATION



As these results are only predictions, they will be dealt with later, together with the results of the integration achieved by the students after the completion of the programme.

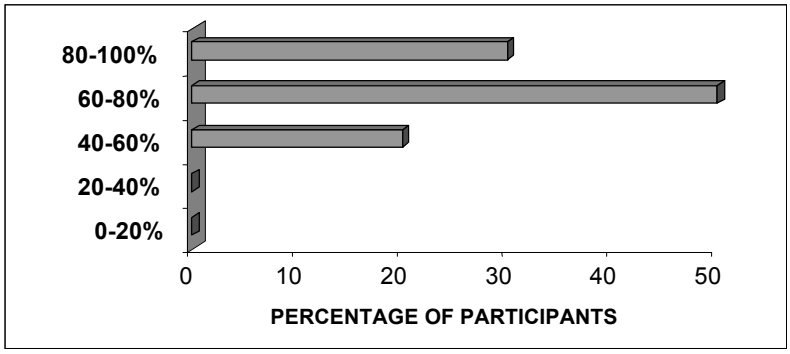
The overall summary of this questionnaire conducted during the programme highlighted that the principles of Unani-Tibb were relatively easy to understand, but with some slight difficulty with respect to the module on pharmacology. Up to this stage of the programme the participants had made reasonable progress integrating Unani-Tibb into their practice, excepting those participants who did not have their own practice. The participants also reported that the programme had benefited them with respect to the understanding of the causes of illnesses as well as diagnosis and treatment. Finally, there was also a positive feedback about the course in general from the patients.

4.2.3. Participant feedback after completion of the programme

The purpose of this evaluation was to assess the degree to which the course had fulfilled the participants' expectations of the programme. It also measured to what extent the participants had successfully integrated Unani-Tibb into their current practice, the benefit obtained from the programme, as well as general information with respect to the structure of the programme (course sessions, duration, training pace). The questionnaire also provided for comments for improvement to the programme.

The results obtained on the *fulfilment of the participants expectations* of the programme *(Figure 25)* was that 20% of the participants stated that the programme only fulfilled between 40% and 60% of their initial expectations of the programme and 50% had between 60-80% fulfilled. The balance of 30% had between 80-100% of their expectations fulfilled.

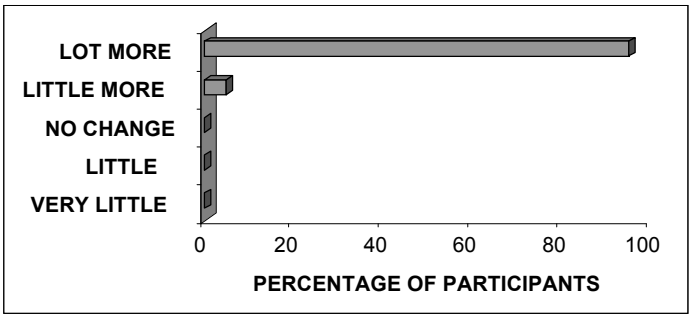
Figure 25: FULFILMENT OF EXPECTATIONS



The participants who only had the lower range of 40% to 60% of their expectations fulfilled could well be due to the fact that the participant's working conditions did not allow him or her to implement all the Unani-Tibb treatments, and thereby recognize the full value of the programme. However the rest of the participants who had between 60% and 100% of their expectations fulfilled give a good indication of the viability of the programme for future participants.

The results obtained on the *understanding of the causes of illnesses (Figure 26)* was that 5% of the participants stated that it had only increased a 'little more' while a remarkable 95% responded that their understanding had increased 'a lot more'.

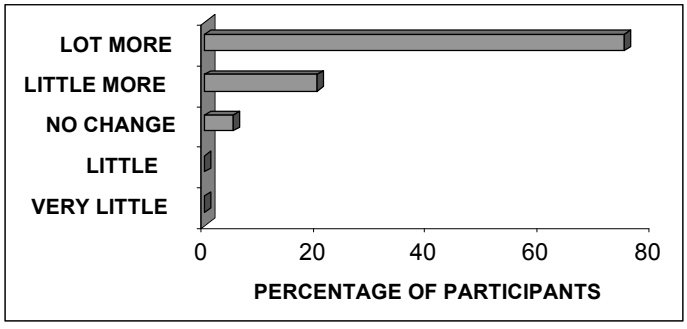
Figure 26: UNDERSTANDING CAUSES OF ILLNESSES



If we compare the results of the understanding of the causes of illnesses to the interim results that appeared earlier which dealt with understanding the pathological processes, it is interesting to see how the overall results have improved with the practical application over the interim period. These excellent results of the understanding of the causes of illnesses are a good indication of the benefit that the integration has given to the participants.

The results obtained on the *diagnostic skills and insights (Figure 27)* was that 75% of the participants emphasised that the programme had benefited them a 'lot more' in the practice of diagnostic skills and insights. A further 20% commented that it only increased a 'little more'. The remaining 5% of the participants stated that it had 'no change'.

Figure 27: DIAGNOSTIC SKILLS/INSIGHTS

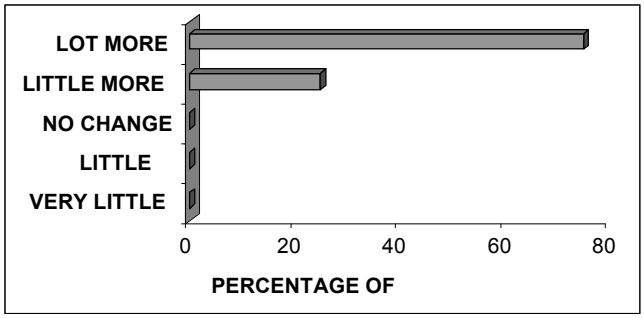


Whilst increasing their understanding of the causes of illnesses, the respondents also subsequently saw improvements in their diagnostic skills and insights. The latter was predictably a result of the

former. By understanding the cause, they were better able to diagnose illness conditions which ultimately enabled them to recommend better treatment options as indicated in the following graph. If we compare these results to the interim results on page 130. It is evident that their confidence in their diagnostic skills had dramatically increased. One important observation was that not one participant stated in the final results that their skills did not improve.

The results obtained on *expanded treatment options (Figure 28)* was that 75% of the participants reported that they now have 'a lot more' treatment options, and the remaining 25% stated that the course has offered them 'little more' in the way of options.

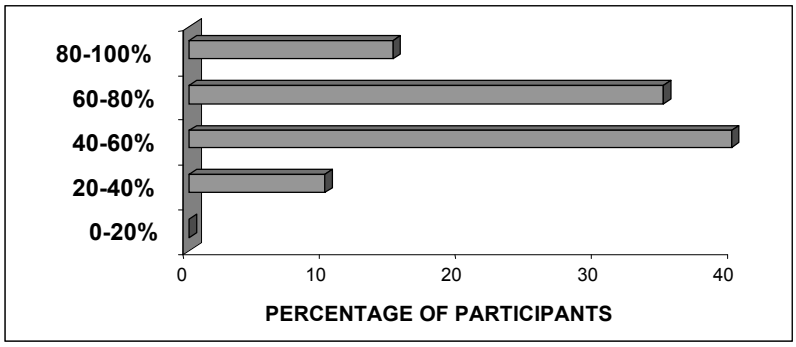
Figure 28: EXPANDED TREATMENT OPTIONS



The majority of the respondents stated that as a result of lessons learnt in this programme they were able to suggest not only better but alternate therapies for their patients. Even if they were still prescribing orthodox medication, they were now also integrating diet, exercise and other forms of therapies to their patient's treatment.

The results obtained on the *extent of integration (Figure 29)* was that at the lower end 10% of the participants stated that they will be able to integrate between 20%-40% of Unani-Tibb into their practice; 40% stated between 40%-60%; 35% between 60%-80% and 15% between 80%-100%.

Figure 29: EXTENT OF INTEGRATION

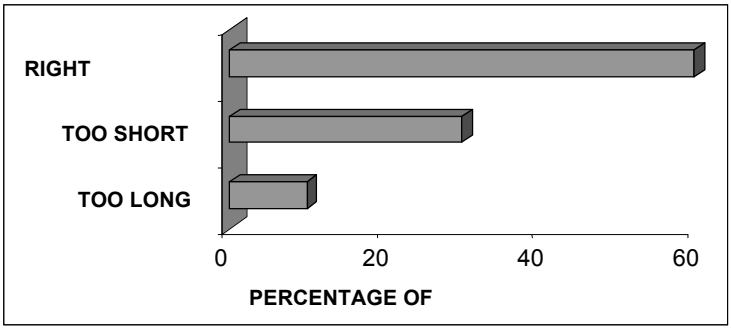


The 10% that could only integrate between 20%-40% could possibly be attributed to the fact that they did not have their own practice, as they worked in hospitals, clinics or other government organizations. As previously mentioned, this made it difficult for them to implement Unani-Tibb when located in a system that is governed by a largely orthodox bio-medical system.

If we compare the results of the final integration achieved by the participants to what was expected, we see that their expectations were rather optimistic. However these final results should be viewed circumspectly within the integration of two medical disciplines, bearing in mind the many different aspects of integration.

The results obtained on the *duration of the sessions (Figure 30)* suggested that 60% of participants were quite satisfied with the course duration, 10% found them too long and 30% found them too short.

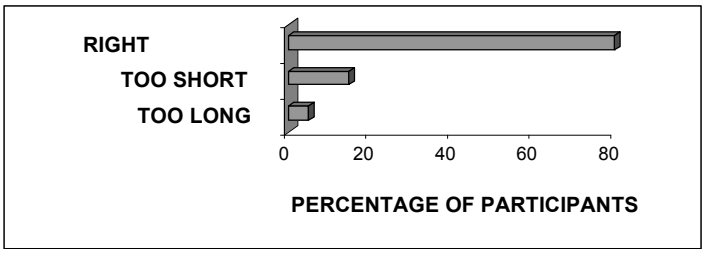
Figure 30: DURATION OF SESSIONS



Although the sessions were over two days, some participants preferred having it on one day even if it required a longer session. Understandably, these were participants who lived a considerable distance from the venue. Conversely, other participants preferred two short sessions rather than one long session. Again, these were mostly participants who lived close to the venue, or had available local accommodation.

The results obtained on the *overall duration of the programme (Figure 31)* was that 5% found it too long, 15% felt it was too short with the remaining 80% felt the course was about the right length.

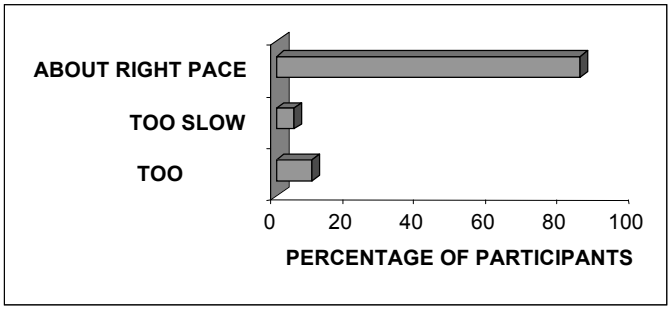
Figure 31: DURATION OF PROGRAMME



The duration of the course was determined by taking into consideration the quantity of the contents of the programme as well as the time constraints of the participants who were employed full-time.

The results obtained on the *training pace (Figure 32)* was that 5% of the participants found the training pace too slow; 10% found it too fast and the balance (85%) stated that the training pace was just right.

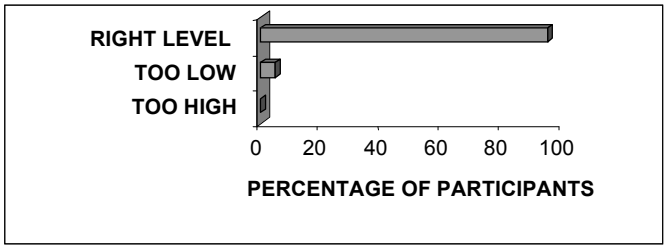
Figure 32: TRAINING PACE



The 5% of participants who found the training pace too slow was possibly due to the fact that they were already applying Unani-Tibb in their practice. The participants (10%) who found the training pace too fast were mostly nurses, with some doctors included.

The results obtained on the *level of instruction (Figure 33)* revealed that none of the participants found it too high, whereas 5% found it too low. The balance of participants (95%) found it at the right level.

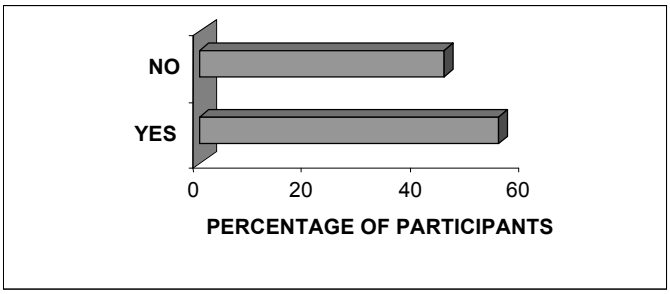
Figure 33: LEVEL OF INSTRUCTION



The above clearly demonstrates that the majority was satisfied with the level of instruction.

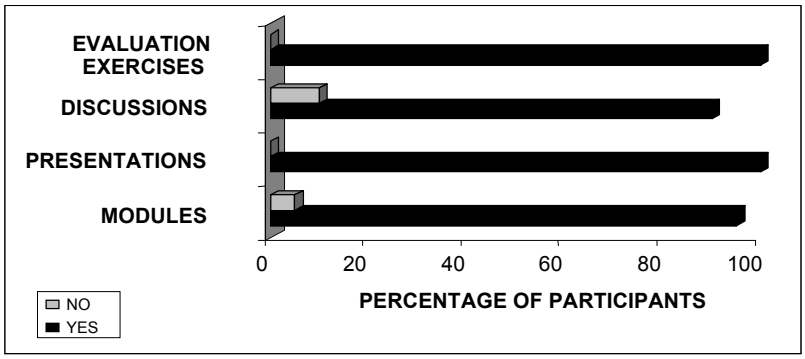
The results obtained on the *need for supplementary notes (Figure 34)* were that 55% of the participants stated that they did require it, whilst 45% stated that they did not.

Figure 34: SUPPLEMENTARY NOTES NEEDED



The results obtained on the *overall quality of the programme (Figure 35)* were that the majority (greater than 90%) stated that they were satisfied with the modules, presentations, discussions and evaluations. Only 5% found the modules unsatisfactory whereas 10% found the discussions unsatisfactory.

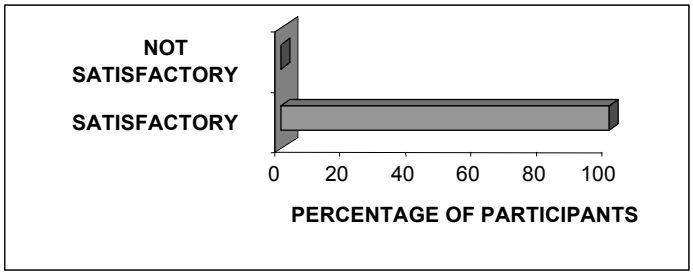
Figure 35: SATISFACTION WITH OVERALL QUALITY OF THE PROGRAMME



One comment was that the evaluation exercises embedded within the modules could have been more challenging. This, however, was from a doctor who was already using Unani-Tibb in his practice, so it was predictably easier for him than the other participants who were having first exposure to Unani-Tibb philosophy and teachings.

The results obtained on the *satisfaction with the overall organization (Figure 36)* were an overwhelming 100% overall level of satisfaction with the entire course.

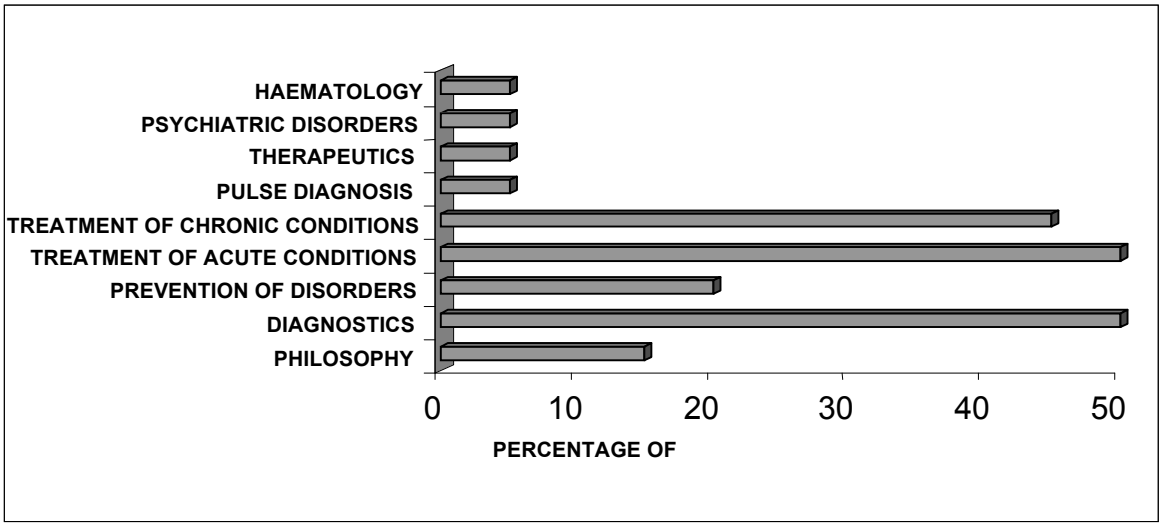
Figure 36: SATISFACTION WITH OVERALL ORGANISATION



Although there were no serious complaints regarding the organization of the programme, some participants felt that they needed more *information on certain areas* of instruction *(Figure 37)*. This should not be seen as suggesting uncertainty or difficulty in understanding, but merely as an indication of either what certain participants would have liked more information on, or where their

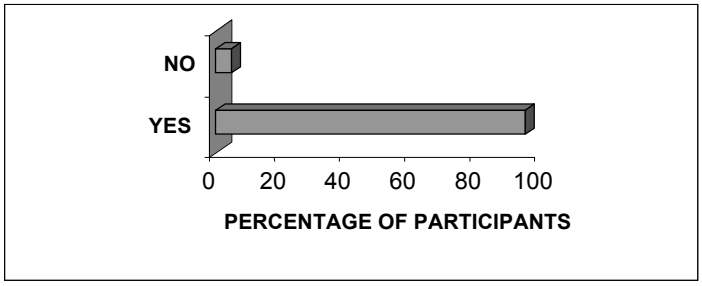
interest lies. On the other hand, it may indicate which area a particular participant would like to specialize in.

Figure 37: AREAS NEEDING MORE INFORMATION



The results obtained on the *recommendation of the programme (Figure 38)* were that 95% answered with an emphatic yes with only 5% answering to the contrary.

Figure 38: RECOMMENDATION OF THE PROGRAMME



The above results dispelled any doubts as to how the participants felt about the course in its entirety. The 95% result is an unequivocal reflection of the potential for growth of this programme. The negative response came from a participant who, although undoubtedly happy with the overall benefits of the course, was unhappy with respect to the cost of the programme. She was also not happy that the Unani-Tibb medication that she dispensed to her patients was freely available in the pharmacy, thus adversely affecting her financial income.

The evaluation also gave feedback on the structure of the programme and programme material. Overall the participants were quite satisfied with the material supplied and the way in which the lectures were conducted. There were a few areas which some participants felt needed more elaboration and more discussion; specifically, psychiatric disorders and haematological disorders.

However, the success of the implementation could well have been affected by how well the participants grasped the fundamental concepts and philosophy of Unani-Tibb, or their employment conditions, and also their personal inclination towards this integration. For example, if they had a very good understanding, then their level of integration was obviously higher than the participants who were still grappling with the basics of Unani-Tibb philosophy.

The overall good response by the participants, to the programme, is also attributed to the design of the programme which took into account their previous training.

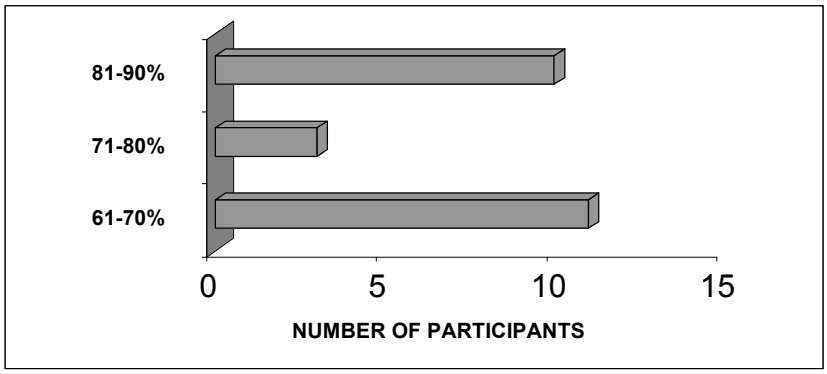
4.3. June examination

The objective of this assessment was to establish the degree to which the course participants had assimilated the basic principles embodied in the philosophy of Unani-Tibb.
Assessing the programme from the perspective of how easy or difficult the paradigm shift from orthodox bio-medicine to Unani-Tibb was especially important and valuable, not only in this pilot study, but also for future programmes.

These principles include physis, temperament, structure and function, diagnostic procedures, governing factors and therapeutic options. As the first half of the programme focused on introducing the philosophical concepts of Unani-Tibb to the participants, it was necessary to ensure that these concepts were well understood before progressing onto the second half. For this reason, passing the June examination was a prerequisite for continuing. Unless the students fully understood the Unani-Tibb principles, the benefit of integrating the course could not be maximized.

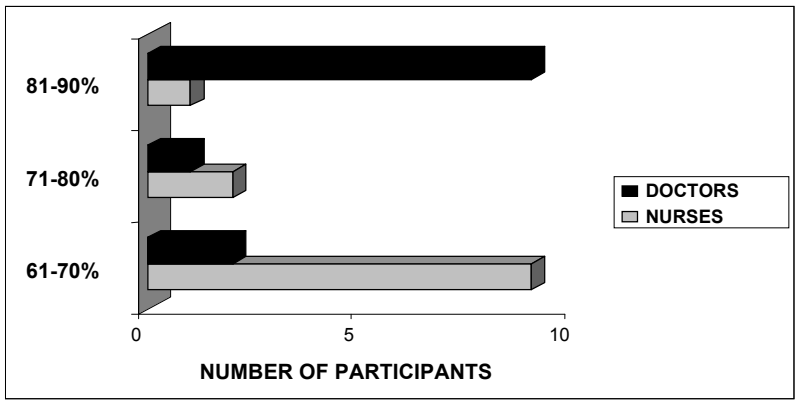
An analysis of the *June examination results* indicated that 10 (41.6%) scored over 80%, 3 (12.5%) scored in the 71% to 80% range and the remaining 11 (45.8%) between 61% and 70% (*Figure 39*).

Figure 39: JUNE EXAM RESULTS



When broken down into the two main healthcare professions, the medical doctors scored higher than nursing participants in the top 80% to 90% range (*Figure 40*).

Figure 40: BREAKDOWN OF JUNE EXAM RESULTS



As the lowest scores achieved were consistently above 60%, it is apparent that the aforementioned principles had been adequately absorbed. Understandably, the orthodox medical doctors performed rather better in this assessment, with their more intensive education and generally wider clinical experience contributing to their achievement.

4.4. Research Project

The research project, which constituted the final module of the programme, was the ultimate measure of the integrative training programme. It was designed to incorporate all the philosophical principles of Unani-Tibb established during the course and to be a measure of the success of the integration. This measure was in essence the outcome of the thesis in assessing whether the participants were empowered to provide effective, affordable and appropriate healthcare. The results of the project provided a measure of these outcomes.

As far as the appropriateness of the research project was concerned, it included a measurement of the Quality of Life as well as other considerations such as treatment methods used, side effects reported, patient compliance and participation.

The research project was a comparative analysis of the chronic illness condition from the Unani-Tibb perspective, as opposed to an orthodox bio-medical or homoeopathic perspective.
Of the 24 participants, 20 completed their research projects. The remaining 4 participants did not complete their projects on time due to personal reasons and other commitments. The projects involved the comparison of an illness condition from the Unani-Tibb perspective compared with the orthodox (or homoeopathic) perspective.

In the panel of 20 participants, 4 conducted their project on Diabetes, 3 on Hypertension, and 2 each on HIV and AIDS, bronchial asthma and rheumatoid arthritis. The remaining participants covered treatment of problems associated with menopause, and clinical conditions such as stress, diarrhoea, psoriasis, eczema, drug addiction and disorders of the menstrual cycle.

The sample group per condition treated consisted of six patients. All presented with chronic ailments hitherto managed with an orthodox or homoeopathic protocol. These patients were subsequently changed to a Unani-Tibb protocol, and a comparison of clinical outcomes, cost benefit and Quality of Life was made after an appropriate treatment interval.

The clinical evaluation included patient history, family history, diagnosis, investigations, disorder management, and therapeutic management. The evaluations were conducted initially before the crossover to Unani-Tibb therapy and then after a period of 3-4 months during which Unani-Tibb treatment was administered.

The cost-benefit parameters were confined to the cost of the medication (difference between orthodox bio-medicine and Unani-Tibb) at the retail price, and did not include any other incidental costs such as time off work and transport expenses.

Similarly, the Quality of Life assessment was completed before and after the crossover to Unani-Tibb therapy, using identical evaluation forms (*Appendix VII*).

Also included in the research project was a biographical data questionnaire (*Appendix IV*) to provide general information.

4.4.1. Biographical data of patients involved in the research project

The data retrieved from the patient biographical questionnaires included demographic as well as medical information. The demographic data will be dealt with briefly as it is not significant to the study, whilst the medical information will be discussed in more detail.

Demographic information

Of the 72 patients, 51 were females and 21 males, with the majority over the age of 40. This was expected as the research project focused on chronic conditions. 12 patients were unemployed, a further 6 patients were retired, 2 were scholars, and 6 were infants. The rest of the patients were employed. The range of employment is reflected by the range of the income per month. Only six patients earned between R6,001 - R10,000 per month, whilst 27 patients earned between R501 - R3,000 per month. 13 patients earned less than R500 per month and the rest (26 out of 72) were unemployed, retired or minors as mentioned above. These, admittedly, very small numbers are indicative of the national figures that states that 50% of the population live below the poverty line (refer to page 73).

Medical information

From the biographical data of the patients, 41 of the 72 patients visit a medical provider once a month on average, whilst 14 patients visit 2 or more times in one month. This could explain the average R500 per month medical expenses as indicated below (*Figures 41 & 42*). Five patients seek medical attention once in three months, with 4 more patients needing a visit once in six months.

This might be considered quite healthy compared to 3 patients who go to their doctor more than twice a week. There was only 1 patient who went once a week and 1 patient who went once a year.

Figure 41: FREQUENCY OF VISITS TO MEDICAL PROVIDERS

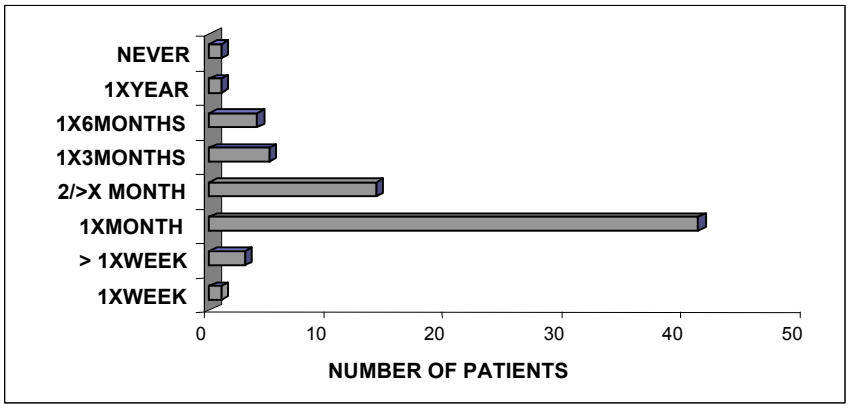
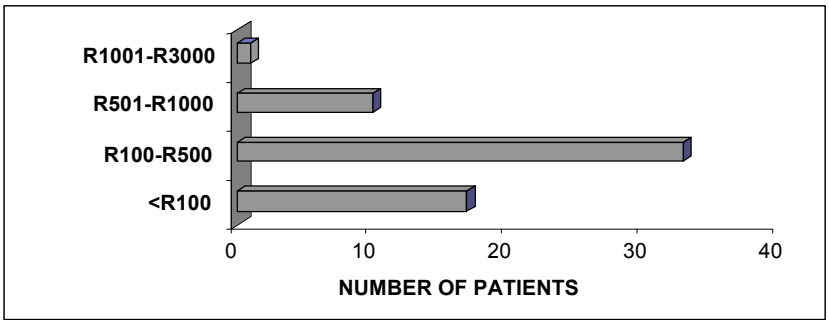
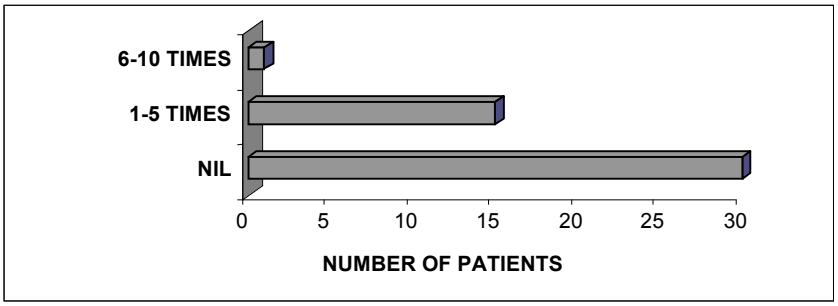


Figure 42: MONTHLY MEDICAL EXPENSES



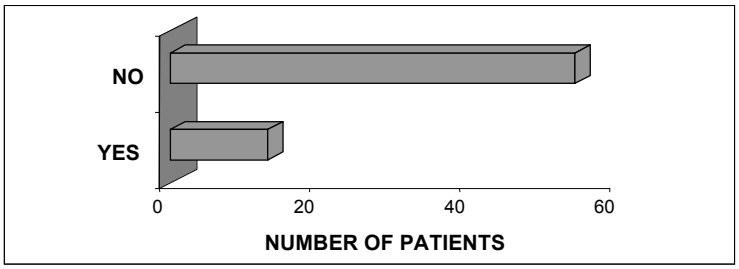
Of the patients only 15 were *hospitalised* between 1-5 times in the past two years with only 1 patient being hospitalised between 6-10 times. The rest were never hospitalised (*Figure 43*).

Figure 43: NUMBER OF HOSPITALISATIONS



The majority of patients (54 out of 72) were not covered by any form of *medical aid or medical insurance.* This could be attributed to the fact that most (40 out of 72) of the patients earned less than R3,000 per month and therefore cannot afford the high cost of medical aid/insurance (*Figure 44*).

Figure 44: DO YOU HAVE MEDICAL AID OR INSURANCE?



4.4.2. Clinical outcomes and Quality of Life (QoL)

As the clinical outcomes and the Quality of Life are related to each other, both these results will be included under the same heading.

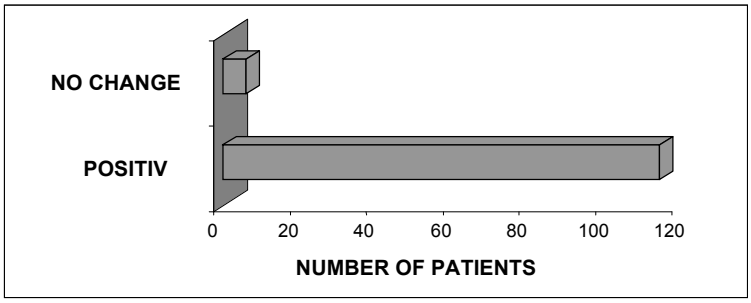
As mentioned in Chapter 3, the following parameters were measured in comparing the Quality of Life before and after Unani-Tibb therapy:

TABLE 8: QUALITY OF LIFE PARAMETERS

Current state of health	Impact on social activities
Feeling full of energy	Impact on work
Feeling nervous	Impact on emotional state
Sleep problems	Patients attitude to disorder
Feeling negative about therapy	Understanding of disorder
Feeling positive about therapy	Recommend treatment to others

The summary of the results showed that, with respect to the *clinical outcomes and Quality of Life,* 114 patients showed positive results whilst no improvement was reported for 6 patients *(Figure 45)*.

Figure 45: CLINICAL AND QUALITY OF LIFE OUTCOME

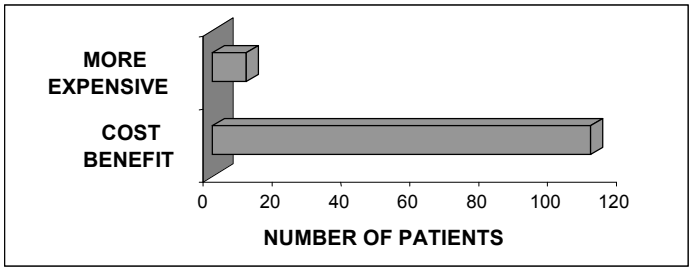


This graph is perhaps one of the most significant aspects of the study. It provides an unequivocal measure of the overall success of the programme. It highlights the impact of the integrative training programme that introduces a holistic approach. Moreover, it focuses on patient empowerment, provides additional insights into the causes of illnesses, and offers additional treatment options. An integrated approach is evidently well accepted as far as being appropriate within the South African context. These aspects will be further elaborated in the discussion chapter.

4.4.3. Cost effectiveness of medication

The results tabulated below are the comparative analysis of the cost effectiveness of treatment in considering only the *costs of the medication.* There was a cost saving reported for 110 patients using Unani-Tibb medication, whereas for 10 patients Unani-Tibb medication was more expensive *(Figure 46)*.

Figure 46: COST OF MEDICATION



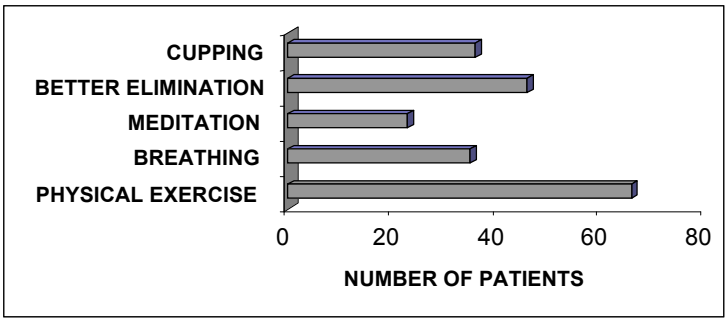
Here again the results are indicative that the overall cost of Unani-Tibb therapy is substantially lower than the cost of equivalent orthodox bio-medicine. It must be re-emphasized that the evaluation of cost-benefit was conducted with respect to the cost of medication alone. The potential

for possible savings by adopting the Unani-Tibb approach in diagnosis, as well as the additional costs of frequently unnecessary pathological testing (which is common to orthodox bio-medicine) will probably be substantial, and could have a meaningful impact on the patient's finances. These costs, as well as the indirect costs of time off work due to factors such as illness, transport and others, were not taken into account. The important consideration of the cost aspect will also be expanded upon in the discussion.

4.4.4. Treatment methods used

For all 120 patients, personal dietary changes were advised, together with appropriate lifestyle modification based upon the governing factors. These included recommendations for more physical exercise (66), regular breathing activities (35), meditation sessions (23), and encouragement of better elimination (46). The regimental therapy of cupping was included in 36 of the patients *(Figure 47)*.

Figure 47: TREATMENT METHODS USED



This graph indicates the different therapeutic options that we used in treatment, excluding medication which also impacted on the results represented above.

4.4.5. Side effects

Side effects of Unani-Tibb medication were reported by 5 of the 120 patients who were undergoing treatment for arthritis. The most common side effects identified by the patients were heartburn and a minor skin rash.

4.4.6. Temperamental evaluation

As mentioned in Chapter Two, the concept of temperament is one of the cornerstones of Unani-Tibb philosophy. The importance of temperamental assessments, both from the diagnostic as well as from the therapeutic perspective, has also been discussed in Chapter Two. Of particular importance in the design of the integrated programme was the significance of introducing this concept of temperament to the participants. In designing the research project, the results obtained from the temperamental assessments regarding the relationship between the patient's temperamental type and the illness he or she was suffering from was therefore an important parameter to be measured.

Below are the results of this relationship between temperaments of patients in the participants' research project and their illness condition. As mentioned in Chapter Two, four temperamental types exist. Each individual is a combination of all four temperamental types but with a dominant and a subdominant temperament. The table below lists the clinical disorder of the patients, together with their dominant and subdominant temperaments reflected:

TABLE 9: ILLNESS CONDITIONS VERSUS THE PATIENT'S TEMPERAMENT (DOMINANT / SUBDOMINANT)

	Sang/Phleg	Phleg/Sang	Phleg/Mel	Mel/Phleg	Mel/Bil	Bil/Mel	Bil/Sang	Sang/Bil
Asthma	4	3	3	1			1	
HTN	8	1	1	1		1	1	5
Drug Addiction				2	3	1		
Diabetes	10	10					1	2
HIV	2		3	2				
Psoriasis			2	1	2	1		
Stress					2	1		3
Eczema	2		1	1			1	1
Menstrual Disorders	3		1				1	1
Menopause	1	1					3	1
Arthritis – rheumatoid	4	2					1	1
Arthritis – osteo		1			1		2	

[Key: Sang – sanguinous; Phleg- phlegmatic; Mel- melancholic; Bil – bilious]

The distribution summarised in the table above is listed below in terms of the percentage of dominant and subdominant temperaments allocated to the various clinical disorders studied.

TABLE 10: RELATIONSHIP BETWEEN CLINICAL DISORDERS AND TEMPERAMENT IN PATIENTS STUDIED

Clinical disorder	Number and percentage of patients having the same dominant and subdominant temperament with a specific clinical disorder
Asthma	of the 12 asthmatic patients, 10 (83%) had a dominant/sub-dominant phlegmatic temperament
Hypertension	of the 18 patients, 15 (83%) patients had a dominant/sub-dominant sanguinous temperament
Drug addiction	all 6 (100%) patients had a dominant/sub-dominant melancholic temperament
Diabetes	all 23 (100%) patients had a dominant/sub-dominant sanguinous temperament
HIV and AIDS	all 7 (100%) patients had a dominant/sub-dominant phlegmatic temperament
Psoriasis	all 6 (100%) patients had a dominant/sub-dominant melancholic temperament
Stress	all 6 (100%) patients had a dominant/sub-dominant bilious temperament
Eczema	of the 6 patients, 4 (66%) had a dominant/sub-dominant sanguinous temperament
Menstrual disorders	of the 6 patients, 5 (83%) patients had a dominant/sub-dominant sanguinous temperament
Menopause	all 6 (100%) patients had a dominant/sub-dominant sanguinous temperament
Arthritis - rheumatoid	all 8 (100%) patients had a dominant/sub-dominant sanguinous temperament
Arthritis-osteo	of the 4 patients, 3 (75%) had a dominant/sub-dominant bilious temperament

From the above table it is apparent that in all illnesses there was a significant percentage (ranging from 66% to 100%) of patients who had the same dominant or subdominant temperament. This suggests a definite relationship between the patient's temperament and the clinical disorder. The relevance of this important finding will be discussed further in the next chapter.

4.4.7. Patient follow-up and treatment compliance

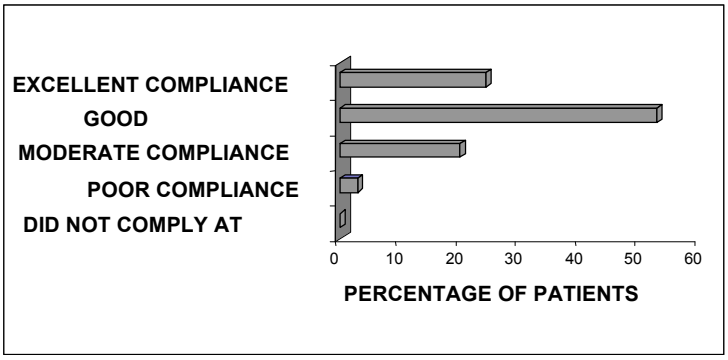
This questionnaire was designed to ascertain (a) the extent to which patients complied with prescribed Unani-Tibb therapy; (b) the degree of subjective improvement, or otherwise, experienced

by the patient; and (c) the extent of integration of orthodox bio-medicine with Unani-Tibb in a sample of 70 patients taking part in the research project.

This questionnaire was particularly important, as it was designed to provide feedback from the patients to establish whether the integrative programme was going to be acceptable and beneficial to them. It would also assess whether they would offer any resistance to the acceptance of the integrated programme.

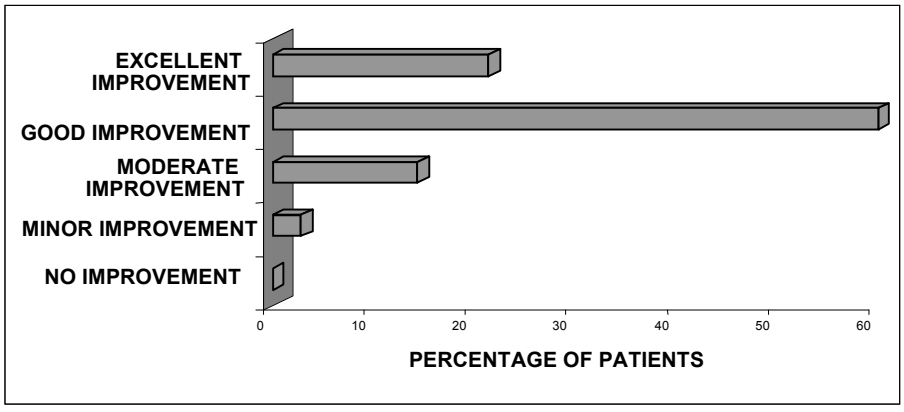
Degree of patient compliance was recorded as excellent in 24% of respondents, good in 53%, moderate in a further 20%, and poor in 3% *(Figure 48)*.

Figure 48: DEGREE OF PATIENT COMPLIANCE



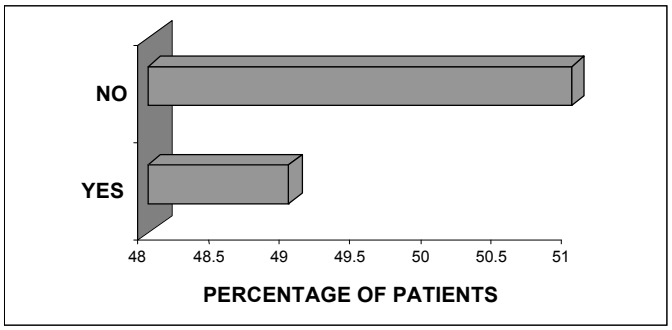
According to a subjective evaluation by the same patients, an excellent *improvement in well-being* was reported in 21%, a good improvement in 60% and moderate improvement in a further 14% *(Figure 49)*.

Figure 49: IMPROVEMENT IN WELL-BEING



On the issue of simultaneous using *Unani-Tibb medication with orthodox bio-medicine*, the patients were almost evenly divided, with 51% of the patients noted using only Unani-Tibb medication, with the remaining 49% declaring simultaneous intake of orthodox bio-medicine *(Figure 50)*.

Figure 50: OTHER MEDICATION USED BESIDES UNANI-TIBB



Although the adoption of Unani-Tibb treatment required considerably more discussion with and explanation to the patient, especially on the subject of governing factors and lifestyle modification, the benefit ultimately manifested as an impressive degree of compliance. This could be attributed to some degree to the willingness of the patients to take part actively in their own personal treatment programme, thus creating a positive attitude and outlook.

It did emerge, however, that extensive changes in the patients' diets posed problems, in that considerable planning and perhaps initial financial outlay would be involved. On the combined use of orthodox medication and Unani-Tibb medication, there was no contra-indications or drug interactions reported.

4.5. Summary and conclusion

The aims of the study were to assess whether the concepts and practice of Unani-Tibb could be incorporated into a training programme for orthodox healthcare professionals, and whether the integrative programme could assist in the provision of effective, affordable and appropriate healthcare in the South African situation.

In this chapter, the results for both the training course and the research projects carried out as part of the study have been presented. In addition, certain aspects of present-day healthcare in South Africa were dealt with.

The motivation for participants joining the training programme was examined, as was their attitude to the modular format of the training. In addition, the participants' understanding of individual subjects covered by specific modules was quantified, also via questionnaires. Assessment of the June examination gave an indication of the participants' grasp of the first six modules of the programme. Furthermore, the participants' attitude to practical features of the modular course – length and duration of sessions, for example – were recorded, as was their satisfaction (or otherwise) with content and organisation. The extent to which specific aspects – for example, dietotherapy – of Unani-Tibb could be integrated into the participants' professional practice was also extensively reported. The results relating to the participants' understanding of theoretical aspects, such as aetiology and the nature of disease, and practical aspects, such as diagnostic and therapeutic processes, were further detailed. Also scrutinised were the attitudes of the patients themselves towards Unani-Tibb. Furthermore feedback from the participants regarding areas for future development in terms of topics, format and further information on specific aspects were noted.

The basic information emanating from the participants' individual research projects were extensively covered. Details of patient demographics have been provided, as was their pertinent medical data, such as medical history, clinical contacts, medical insurance and present Quality of Life. Response to Unani-Tibb medication was documented in detail, together with an attempt at deriving a cost-benefit analysis of their treatment. Details of therapeutic procedures applied to the patients, including dietotherapy, cupping and breathing exercises have been described, together with their clinical outcomes and adverse events. The degree of patient compliance and their apparent change in well-being were also noted. Finally, the results of a temperamental evaluation were documented and presented, in which a correlation between the clinical disorder and the patient's temperament was attempted.

These results are discussed and elaborated on in Chapter Five.

CHAPTER FIVE

Discussion on results

5.1. Introduction

In this chapter I discuss and interpret the results of the previous chapter, in order to ascertain whether the aims and objectives of the study have been achieved.

The aim of this study was to examine the possibility of integrating Unani-Tibb into a training programme for healthcare professionals in South Africa, with a proven background of orthodox bio-medicine, and whether this could assist in the provision of effective, affordable and appropriate healthcare in the South African context.

The need for the study emerged as a result of an awareness of the deficiencies that are perceived to exist within orthodox bio-medicine in the current South African healthcare scenario. An assessment of the fulfillment of the needs for the integrative training programme is dealt with in this chapter.

The needs were to ensure that the training programme:
(a) provided a holistic approach to healthcare;
(b) was readily understood by the participants;
(c) provided an improved understanding of the causes of illnesses;
(d) enhanced diagnostic skills;
(e) provided additional treatment options;
(f) allowed for easy integration into their current practice;
(g) improved clinical outcomes;
(h) demonstrated cost effectiveness;
(i) showed improvement in the patients' Quality of Life; and
(j) was appropriate within the South African context.

The discussion therefore focuses on the various aspects of the needs of the integrative training programme as listed above.

In addition, this chapter includes feedback from the participants on the success of the integrative training programme.

5.2. Provision of a holistic approach to healthcare

An important requirement of this integrative training programme was that it should provide a holistic approach to healthcare. The question therefore arises as to the degree of success in achieving this. There is a general trend in South Africa and internationally towards a more holistic approach to healthcare (Lazarus, 2004). The results obtained from the questionnaire on 'Motivation for enrolment on the programme' (*Appendix II*) clearly illustrated that the participants recognized the trend of moving away from orthodox bio-medicine towards complementary or holistic healing (Contreras, 1997). An advantage of a holistic atttitude has also been identified both by Sindiga and colleagues (1995:21): "…holistic approach to medical problems and misfortunes whereby both organic and psychological attributes of disease or illness are considered together", and by Ampofo & Johnson-Romauld who affirmed that:

> Disease is not merely something from malfunctioning in this or that organ, or a lesion therein… but essentially of a rupture of life's harmony, to be imputed either to a material cause instinct with some 'intangible force' or directly to that intangible force itself. It is…necessary in traditional medical practice to confront the symptomatology and aetiology of diseases not only in the material but also in the immaterial world (Ampofo & Johnson-Romauld, 1987:40 in Sindiga et al, 1995).

The need for a truly holistic approach to future healthcare in South Africa was recognized as the foremost incentive for enrolment on the course. Particularly attractive to the participants was the ability to re-examine the concepts embodied in the age-old Hippocratic principles. This includes the perfect nature of creation, the unique character of the individual as expressed in the form of his or her temperament, and the body's inherent wisdom, or physis, which is intimately involved in self-healing. This shift in attitude has had one major consequence, namely the reversal of the Cartesian mindset, which regards the human body as being a machine, albeit extremely complex, and the separation of body and mind (Gilbert et al, 1998). The integration of body, mind and soul was more readily recognized and accepted, even though this concept was not totally in keeping with participants' previous training. The net result was that it allowed them to view their profession in a different light, namely one that accepts the role of restoring harmony between the body and the environment or nature.

This observation was succinctly reinforced by the participants, one of whom mentioned that:

> "The course reinvigorates the concept of holistic medicine to treat the patient who has the disease and not the disease in a patient" (Participant ZM - project: asthma).

Another commented along similar lines:

> "This limited study confirms the efficiency and importance of the Unani-Tibb protocol in boosting or improving the immune system of the HIV patient. It treats the patient holistically and not symptomatically" (Participant MAT - project: HIV and AIDS).

5.3. Comprehension of the programme contents

A critical factor in any training programme is whether the contents are readily understood by the participants. How readily the contents of the programme were understood by the participants was evident from the results of the questionnaire which was issued and completed in August 2003. This revealed, that overall, there was a substantial degree of satisfaction with the ease of assimilation of the various topics covered during the integrative training programme.

As the current institutional training of both Unani-Tibb and orthodox bio-medicine is presently conducted along similar lines, this task was, understandably, relatively easy to complete successfully. The basic sciences of anatomy, physiology, biochemistry and pathology, and the practical disciplines involved in clinical and diagnostic techniques are common to both orthodox and Unani-Tibb medical systems (www.hamdard.edu and www.jamiahamdard.edu), so no real hurdles were encountered on the way to a satisfactory outcome. Notwithstanding the apparent contrast of previous medical education and experience, the design of the programme was built upon the foundation of previous basic training combined with clinical experience, with the philosophical principles of Unani-Tibb superimposed. Moreover, the gradual introduction of Unani-Tibb concepts as an outcome-based approach with practical exercises during the first half of this programme allowed the participants to develop a satisfactory degree of comfort with the paradigm shift. The success of the training programme of integrating different paradigms is indeed possible, as long as each is willing to learn from the other (Lazarus, 2004).

5.4. Understanding the causality of disease

The training of Unani-Tibb demands a paradigm shift in the understanding of the causes of diseases. It was therefore essential to ensure that the participants had a full understanding of the aetiology of disease.

The Unani-Tibb principles of cause and effect, which have been extensively described in Ibn Sina's *Canon of Medicine* (Jamia Hamdard, 1993; Gruner, 1929; Bakhtiar, 1999), provided a comprehensive understanding of the different causes of illnesses. One of the most beneficial aspects of the programme was an evident improvement in the general understanding of the aetiology of disease. This emerged from the questionnaire which was issued and completed at the end of the training programme. In their responses, 19 of the 20 (95%) participants reported that the programme greatly benefited them in the understanding of the causes of the illnesses covered in the modules (*Figure 26, page 133*).

One point of note was the relationship between an individual's behaviour and the environment, which is expressed as the governing factors, sometimes termed lifestyle factors. An understanding of the governing factors encouraged a comprehensive understanding of the causes of illnesses. Moreover, these additional insights provided not only the 'bigger picture', but a clearer perspective of cause and effect, and so a better, broader understanding of the subject of aetiology.

In the orthodox bio-medical context, the lack of understanding of the causes of illnesses is arguably the greatest shortcoming. The reason is that the doctrine of specific aetiology does not accept, let alone explain, the multifactorial nature of the causes of disease (Bhikha & Haq, 2000), and frequently results in unnecessary and costly pathological procedures as well as prolonged and ambiguous diagnosis, which by their intrusive nature often results in compounding of the illness conditions.

Two observations made by the participants support this point:

> Unani-Tibb has come to the rescue of previously unexplained pathologies, as psoriasis, to afford the patient hope and more importantly, empowerment to take control of their own management (Participant HE – project: psoriasis).

And: The more comprehensive the understanding of the causes of illnesses allows for a treatment protocol that is more efficient and effective (Participant MAT – project: HIV and AIDS).

5.5. Effect on diagnostic skills

Accurate diagnosis of disease is a cornerstone of the Unani-Tibb medical system. It was therefore imperative that the diagnostic skills of the participants undergoing the training programme were enhanced. This is another area in which the programme seems to have been markedly successful. Support for this observation emanates from the results of the questionnaire conducted after the completion of the programme. Of the 20 responses to the question, 15 (75%) participants reported 'a lot more' benefit, 4 (20%) reported 'a little more' benefit and only one reported 'no change' *(Figure 27, page 133)*.

Supporting the participants' increased competence in diagnosing effectively was their acceptance of the value of the concepts of temperament, humours and qualities, which are closely associated with the signs, symptoms and manifestation of diseases. Furthermore, the temperamental evaluation of patients also provided valuable diagnostic insights into the patient's predisposition towards specific clinical disorders, especially those of a chronic nature. The important concept of the relationship between temperament and illness conditions has been clearly illustrated (*see Table 10, page 149)*. These results concur with the renewed interests over the past two decades of the importance of identifying and respecting the uniqueness of the individual (Kagan, 1994; Shealy, 1999; Rolfe, 2002 and Lawton, 2003). Much of the focus of a number of complementary medical systems, Unani-Tibb amongst them, is on the individuality of the person, and accordingly both diagnosis and subsequent therapy are tailored with this in mind.

These systems accept that the symptoms arising from the identical clinical disorder vary from person to person, and that due notice should be taken of this. For example, pain, raised temperature and increases in blood pressure vary enormously between people even if they are subjected to the same clinical disorder. In this situation, therefore, diagnostic skills are paramount - otherwise therapy which is based erroneously will be instituted, resulting in an unsatisfactory conclusion at considerable expense. I therefore maintain that the introduction of the philosophical principles of Unani-Tibb into the integrative training programme has led to a significant improvement in the diagnostic ability of the participants.

The improvement in diagnostic skills should have additional benefits. Firstly, the potential for improved diagnosis should be reflected in a considerable cost benefit to the patient. Secondly, there should be a marked personal enhancement of the participant with respect to their diagnostic

abilities. As highlighted in Chapter Two (page 75), the diagnostic capabilities of many orthodox general practitioners in current bio-medical practices are not very effective, and this invariably results in extensive referrals to specialists. The logistic and economic implications for the patient need not be emphasised.

5.6. Additional treatment options provided

A measure of the success of the integrative training programme was the extent to which it provided additional treatment options.

> Treatment means restoration of harmony within the body, and between body and environment. It involves diet changes, herbal medication, behaviour changes, and religious rituals. It is a functional adaptation to immediate circumstances (Van Rensburg et al, 1992:326).

These additional treatment options provided great value to the participants. Of the respondents, 16 (75%) reported 'a lot more' benefit, whilst 4 (25%) reported 'a little more' benefit (F*igure 28, page 134*). This finding is supported by feedback from the participants' research projects, which highlighted treatment based on the governing factors. Specifically, these included dietary changes for all patients, encouragement to undertake more physical exercise, the performance of breathing exercises, undergoing meditation, undertaking cupping procedures, and helping the body's elimination processes. Instead of restricting the therapeutic options to standard medication and surgical procedures, the participants had many other options of treatment that could be used, in addition to Unani-Tibb medication *(Figure 47, page 147)*. One participant who recognized this point noted:

> The course has given me an additional tool to use when treating patients (Participant ZM – project: asthma).

A better understanding of the causes and progression of different diseases, as well as the role of physis, enabled the participants to have a more targeted approach in terms of therapeutics with improved results. This improvement in treatment approach is of major significance. If we compare Unani-Tibb therapy as performed in the participants' research projects to orthodox bio-medicine, where treatment consists mostly of pharmaceutical medication and/or surgical procedures, the potential for side effects, iatrogenic responses and other adverse events is greatly diminished.

5.7. Integration into current practice

As discussed in Chapter Two, there is a substantial and growing dissatisfaction with orthodox bio-medical practice worldwide (Coulter & Willis, 2004). There are several reasons for this. On the one hand there is an increasing reluctance to resort to high costs of diagnostic techniques and medication. On the other hand there is a problem with the almost exclusive focus on eliminating symptoms rather than dealing with the underlying cause of a particular illness. This has led to a resurgence of interest in a number of medical modalities presently contained in complementary medicine. In fact, training in certain forms of complementary medicine is being introduced into the training of orthodox bio-medical practitioners in many parts of the world (Rees & Weil, 2001).

Parallel to this renewed interest in complementary medicine has been the emergence of integrative medicine. This essentially combines the best aspects of both complementary medicine and orthodox bio-medicine, which offers optimum medical treatments for a patient whilst at the same time recognizing his/her uniqueness.

In the South African scenario, the form of complementary medicine to be considered as a component of integrative medicine would have to recognise the cultural needs of a substantial section of the South African population. Unani-Tibb is perhaps unique amongst the different complementary medical systems in that it has much in common with indigenous African Traditional medicine.

In this study, 90% of the participants responded that they were able to integrate more than 50% of Unani-Tibb into their practice. The remaining 10%, however, indicated that they will only be able to integrate between 20-40% of Unani-Tibb into their practice (*Figure 29, page 135*). The willingness of the participants to integrate the two paradigms is a measure of their pragmatic approach (Van Rensburg et al, 1992). This observation is important in that it emphasizes the practical application of Unani-Tibb as presented in the programme, and suggests that introducing education in the principles and practice of this particular medical system could have positive spin-offs.

On a realistic note, however, it needs to be remembered that one of the shortcomings in the implementation of the programme was that some of the participants did not have their own practice, as they worked in hospitals, clinics or other government organizations. This made it difficult for

them to implement Unani-Tibb when located in a system that is governed by a largely orthodox bio-medical system.

The success of this programme shows that even though there exists a huge difference between these two medical paradigms, the bridge between a traditional system (which is characterised by strong philosophical principles), and orthodox bio-medicine (which is scientific and secular) can be achieved. This potentially and mutually enriching relationship between indigenous and modern knowledge has been recognized by Lazarus (2004).

To quote from 3 participants on this subject:

> Unani-Tibb doctrine has become increasingly prevalent in my practice, to the extent that it now forms 85-90% of the practice (Participant HE – project: psoriasis).
>
> And: Results of this study confirm that the role of integrated (sic) medicine cannot be undermined at any stage of suffering. It should form an integrated part of all programmes (Participant MFJ - project: HIV and AIDS).
>
> And: Unani-Tibb can easily be used side by side with orthodox bio-medicine, and, at times used instead of orthodox bio-medicine. Both have an equally important role to play in the management of patients (Participant ZM – project: asthma).

5.8. Improved clinical outcomes

The acid test of the true value of a practical-orientated integrative training programme such as Unani-Tibb is whether or not it leads to improved clinical outcomes. As extrapolated from the research projects, of the 120 patients, 114 (95%) reported to have positive clinical outcomes (*see Figure 45, page 146*) with only 5 (4%) patients reporting side effects associated with the medication (*see 4.4.5., page 147)*. The positive outcomes are without a doubt attributed to a targeted approach in terms of therapeutics, as well as the expansion of treatment modalities used incorporating governing factors.

The compliance of the patients reinforced by their participation in the healing process as identified in the follow up questionnaire was also a significant factor for successful results. All these results corroborate the benefits of a holistic approach as opposed to the orthodox bio-medical model which views illnesses with a single cause and treatment focusing mostly on the use of medication and/or surgical procedures (Van Rensburg et al, 1992).

5.9. Cost effectiveness of the programme

Was the introduction of the integrative training programme cost effective? Although the study only measured the direct costs of orthodox medication *vis à vis* Unani-Tibb medication, the participants reported that the use of Unani-Tibb medication was less expensive than orthodox medication. This is corroborated by the cost saving reported by 110 (92%) patients using Unani-Tibb medication (*see Figure 46, page 146*).

The full implication of the cost benefit of Unani-Tibb would need to take into account several other parameters, including indirect costs such as loss of working time, transport to and from the healthcare professional and hospital visits for tests. Other costs are of a more general nature, and refer to, for example, the cost implications of a system of healthcare which is considered economically ineffective with respect to the diagnosis and treatment of a number of clinical disorders (Lanctôt, 2002).

In this regard it is pertinent to mention that the success indicated by the implementation of the integrative programme would hopefully have a major impact on the overall costs, as a better understanding emerges of the causes of illnesses, the diagnostic techniques employed, and the extended treatment options on offer, could well result in substantial financial benefit. In view of its importance, this overall cost benefit would have to be confirmed in larger studies.

The cost benefit is corroborated in the following statement made by one of the participants:

> The Unani-Tibb protocol has proved undoubtedly to improve health transformation as a natural modality with affordable cost benefit, effective management and positive Quality of Life (Participant FM —project: rheumatoid arthritis).

5.10. Improvement in the Quality of Life

It is essential that when a patient converts from one medical treatment code to another that his or her Quality of Life (QoL) is maintained, or, ideally, improved. Did this integrative training programme lead to an improved Quality of Life? The positive Quality of Life findings as reported earlier (*see Figure 45, page 146*) is particularly noteworthy. This positive response could well arise

from two sources: the first springs from the treatment applied with respect to medication, predominantly Unani-Tibb. The second emanates from the application of a holistic approach, which was in this situation, based upon Unani-Tibb principles. Also contributing substantially to the outcome of an improved QoL was the greater interaction between practitioner and patient which led to the uncovering of the causes of illnesses. This was followed by the assumption of a more active role and greater commitment by the patient in the healing process, especially in the adoption of the governing factors as an instrument of healing (Chishti, 1991).

It is well known that a positive attitude results in an improved QoL, as it improves the activity of the immune system in the healing process. This is an observation that forms the basis of the health science of psycho-neuroimmunology (Ader et al, 1995).

5.11. Appropriateness for the South African scenario

Will the application of the integrative training programme be appropriate within the South African context? The appropriateness of the integrative programme was highlighted by the above results of improved clinical outcomes, cost benefit and Quality of Life. Moreover, the fact that the integrative programme included additional dimensions by establishing the holistic nature of medicine was particularly significant. Specifically, the following aspects were encompassed:

(a) Patient empowerment

The programme required addressing the underlying causes of the problems and thereby involved greater patient participation, which developed naturally into greater empowerment in relation to the treatment protocol. This emphasis on empowerment in the primary healthcare sector is considered to be another important component of the future South African healthcare scenario, where patients are encouraged to take greater responsibility for their health (Bhikha & Haq, 2000). This is supported by quotes from individual participants:

> Significantly all patients in the study said they would recommend the new management to others (Participant HE – project: psoriasis).

> And: Patient 2/AL was negative about instituting Unani-Tibb principles with medication from the beginning and benefited the least (Participant SK – project: arthritis).

> And: Prevention is for the time being our most valuable tool to curb the pandemic. Integration and economic healthcare is a logical next step (Participant MFJ – project: HIV and AIDS).

> And: The old dictum 'prevention is better than cure' has a firm foundation in Tibb (Participant MFJ – project : HIV and AIDS).

(b) Cultural aspects

In this programme, the introduction of treatment regimes that were culturally familiar to the patients, such as cupping, blood cleansing and purgation, could all have contributed to the positive outcome of the illness condition being treated for both patient and practitioner.

As most South Africans believe in God or a Higher Force or Supreme Being as part of their worldview, the common understanding between doctor and patient at the metaphysical level of the existence and intervention of the 'Supreme Spirit of the Universe' - in whatever form of understanding it takes in the individual - leads to a positive and supportive attitude and interaction (Lazarus, 2004 and Hammond-Tooke, 1989).

More importantly it is the recognition of the cultural and spiritual needs of the people, which encompasses the programme, that was most appealing to the participants as well as the patients.

To quote participants:

> In Unani-Tibb we discover basic, simplicity and cost effectiveness of basic medicine, that takes us back to our rural origins of medicine and healing that was practiced by our ancestors and parents, and is practiced presently (Participant LM – project: menstrual disorders).

> And: The patients also liked Unani-Tibb medication because it is from nature which their forefathers use (Participant SM – project: hypertension).

(c) Management of chronic care

The participants research projects covered many of the commonly encountered chronic illnesses such as diabetes, hypertension, asthma, arthritis and HIV and AIDS, with positive and encouraging results emerging. This is particularly significant especially in our country where there is an increasing incidence of chronic illnesses and the implications thereof, which will have to be addressed (Van Rensburg et al, 1992; Bradshaw & Nannan, 2004). This point is reinforced by comments from the participants:

> The study reveals a remarkable improvement in the Quality of Life of the patient, which is an important factor to note, when considering long term treatment of a chronic clinical condition such as diabetes mellitus (Participant GM – project: diabetes).

> And: This study reveals a significant improvement in the Quality of Life of the patient when switched to Unani-Tibb medication, a factor of considerable importance when considering long term treatment of menopause related symptoms (Participant AB – project: menopause).

> And: The major problem with arthritis is the socio-economic burden to the state, such as investigative procedures, hospitalizations, operations, grants, etc (Participant FM – project: rheumatoid arthritis).

(d) Better equipped healthcare professionals

The integrative training programme has empowered the healthcare professionals to deliver more comprehensive healthcare, with a better understanding of the causes of illnesses. Moreover, it has helped to increase awareness of different diagnostic techniques and to become more familiar with different treatment options. Training that directs the practitioner to look for the holistic causes of illnesses automatically focuses much more on the patient, so allowing for more interaction and discussion. This all contributes to more efficient patient care.

In the words of one participant:

> The introduction of Unani-Tibb is a breakthrough in South Africa where the cost of living is high, healthcare is deteriorating and chronic illness conditions could have been cured or prevented from aggravating/worsening if effectively dealt with (Participant LM – project: menstrual disorders).

5.12. Summary and conclusions

To a large extent, this study vindicates the basic premise of the thesis, namely, that the possibility of integrating Unani-Tibb with orthodox bio-medicine can be achieved in the context of the present South African healthcare scenario.

The various criteria by which the integrative training programme was evaluated have been examined. These concern both the participants in the programme, and the patients who were

involved in the research projects and received Unani-Tibb therapy. The first section of the study was devoted to the preparation of specific self study modules covering the wide range of Unani-Tibb philosophy, principles and clinical applications. From the participants' feedback it is evident that a successful operation can be justifiably claimed, as the training material which was central to the programme was generally well received, understood and retained by the participants.

In particular, the holistic approach to therapy was appreciated and acknowledged. They considered that their diagnostic competences had been enhanced, and were made aware of the increased range of therapeutic interventions that were now available through the Unani-Tibb integration. Most of them felt unequivocally that they would benefit from the introduction of Unani-Tibb into their practices.

The second section was concerned with the application of Unani-Tibb principles to specific clinical disorders in patients being treated by the participants. From the patients' point of view there was a clear benefit from undergoing Unani-Tibb therapy, not the least of which was the virtual absence of adverse events. This was reflected in the improvement in their respective Quality of Life, a major factor in maintaining patient compliance, by ensuring adherence to treatment. Likewise, this part of the programme could be regarded as a success. Not only was the clinical benefit to the previously treated patients maintained by Unani-Tibb intervention, but this was achieved markedly in a cost effective manner.

Moreover, the outcomes of the study were consistent with the cultural mores of both the participants in the training programme and the patients in the research project. 'Buying-in' to the very important cultural aspect of the integrative training programme is worthy of further investigation, especially now that attempts are underway to bridge the gap between medical paradigms.

There was, admittedly, a number of deficiencies associated with the study reported here. This was perhaps understandable, as the study was a completely new and original venture for a South African group into the clinical aspects of Unani-Tibb, and in the formal training of integrative medicine. There were absolutely no guidelines for the programme organizers, so virtually every feature was a groundbreaking exercise. This applied to everything from preparation of programme resources, to questionnaires, logistics, administration support and communication routes.

Amongst the limitations of the study was the number of participants recruited for the programme which was smaller than is required for a rigorous statistical analysis. Also the number of patients recruited by the participants for their clinical research project was similarly fewer than ideally required. This too did not allow for a rigorous statistical analysis. Moreover, it would have been better, in retrospect, to have restricted the number of clinical indications in the research project to not more than four for the whole group. This would have allowed for a more meaningful analysis to have been conducted. In addition, the Quality of Life (QoL) questionnaire was not fully field tested prior to the study, due to time constraints imposed by the programme itself. This led to a certain degree of misunderstanding about the interpretation of some of the various parameters in the questionnaire. Finally, the extent of objectivity of the course administrators, particularly myself, in the design and implementation of the integrative training programme, may well have been responsible for a certain degree of bias.

A number of factors, largely outside the immediate control of the course organizers, also mitigated against the study. One was the lack of access by a number of participants to patients for inclusion into the clinical research project, which arose generally amongst the nursing practitioners. In many cases they had neither the opportunity nor authority to approach and co-opt patients, and often faced a degree of reluctance or even obstruction from the professional staff to whom they reported. Also problematic was the geographical dispersion of the participants. This, to a certain extent, inhibited effective or frequent communication between the course administrators and a number of participants. Finally, certain disruption to the study and research project was occasioned by the sporadic availability of certain medications.

This pilot study suggests that further work is needed to confirm these observations and that a greater number of patients should be involved in order to ensure that the clinical data obtained can be subjected to a more realistic scrutiny. This will be elaborated upon in Chapter Six which follows.

In conclusion, on the basis of the results of the thesis, it is evident that the integration of Unani-Tibb with orthodox bio-medical procedures is a feasible and attractive option for fulfilling the healthcare needs of the total South African population.

CHAPTER SIX

Conclusions and recommendations

6.1. Introduction

In the study, I set out to answer two questions:

(a) Can the philosophical principles and clinical practice of Unani-Tibb be effectively integrated into a training programme for orthodox healthcare professionals?

(b) Can this integrative programme assist in the provision of effective, affordable and appropriate healthcare in South Africa?

The first component of the study was the creation of a customized year-long modular based training programme which covered the philosophy and clinical practice of Unani-Tibb for integration by orthodox bio-medical practitioners. The second component, which was essentially the ultimate measure of the study, was the application of this integrative programme by the participants in the treatment of a number of common clinical disorders to assess whether the integrative programme provided improved clinical benefits, Quality of Life, and offered a meaningful cost-benefit. On the basis of this admittedly small pilot study it can be concluded that the integration of Unani-Tibb into the orthodox bio-medical system could offer benefits to South African healthcare as a whole. The study also revealed that the integrative training programme was well received by those participants who had a leaning towards African Traditional medicine, highlighting its potential relevance within the South African context.

In this final chapter I summarise the relevant points emerging from the study. These include a summary of the literature review, the results of the study and their significance, the implications and limitations of the research, as well as recommendations for further research.

6.2. Summary of the literature

There is an increasing body of literature on the various health systems available and operating internationally in general and South Africa in particular. This reflects a renewed interest in accommodating the integration of various medical paradigms to address numerous obstacles to the provision of better healthcare for the population as a whole. However, in surveying the available literature, both here and abroad, I was unable to uncover any substantial attempts at integrating Unani-Tibb into orthodox bio-medicine in the treatment of the type of chronic clinical disorders reported in the thesis. I found this somewhat surprising, as Unani-Tibb is practiced extensively on the Indian sub-continent, so I would have expected direct comparisons to have been made, especially as orthodox bio-medicine is making substantial inroads into the professional healthcare sector in many parts of the world. This study does, therefore, appear to be unique in both concept and execution. It does not infer, however, that interaction or movement between the two disciplines does not occur, as it is well known that in virtually all societies the phenomenon of medical pluralism operates. There is a free and substantial movement between, for example, the popular sector medicine and folk sector medicine, and between orthodox bio-medicine and complementary medicine (Gilbert et al, 1998).

In South Africa the system of healthcare rests on three foundations. The first is *African Traditional medicine,* a medical system that goes back for millennia. It is practiced by a majority of the population, most of whom are black African and, until quite recently, predominantly rural-based.

The second is *orthodox bio-medicine*, or Western medicine. This is an import into this country from the developed countries of Europe and North America. In the past it was adopted predominantly by the relatively affluent white sector of the population, but more recently has become embraced by members of other upcoming middle class racial groups, who are urbanized and who favour the westernised way of life. In this context, one should be reminded that orthodox bio-medicine provides only a small proportion of healthcare in most countries worldwide (Gilbert et al, 1998).

The third is *complementary medicine*, a generic term that embraces medical ideologies alternative to orthodox bio-medicine such as Homoeopathy, Ayurveda and Unani-Tibb, and includes increasingly popular techniques such as acupuncture, reflexology and aromatherapy (Lee, 1995). Some of these complementary medicines have been practiced for centuries in many parts of the world. They have invariably been culturally embedded in many societies as part of their ‘cosmic model’ or

'worldview', which includes multiple dimensions of religious, metaphysical and secular physical perspectives (Hammond-Tooke, 1989).

The recent increase in popularity of complementary medicine in the western environment springs partly from the desire for a more holistic approach to healthcare, involving the patient's behaviour, as well as mental, spiritual, emotional and nutritional concerns (Van Rensburg et al, 1992). Another major factor is the disillusionment with orthodox bio-medical treatment. The cost of orthodox bio-medicine is escalating sharply, putting many procedures out of the reach of even affluent patients, and seriously straining financial support structures. Moreover, people are becoming increasingly aware that medical outcomes are often unsatisfactory, that many interventions are not only unnecessary but carry some risk, that iatrogenic consequences can be serious, and that the underlying disorder is not being addressed directly (McTaggart, 1996).

The literature review provided clear insights into the deficiencies of healthcare provision in South Africa, with emphasis on the role of traditional medicine, the strengths and weaknesses of orthodox bio-medicine and the pressing need for an integrated health system. Integration can take different forms. It can, for example, consist of the different systems working parallel to each other in different segments of the public sector. Alternatively, it can refer to the adoption or introduction of certain aspects from one system in order to enhance another system. This latter was the form selected for this particular research project.

The need to modify medical education in order to accommodate the increasing demand for medical treatment which includes the principles of holistic therapy has been accepted by policy-makers in numerous countries, both developed and developing. Substantial changes are presently being applied to medical training curricula worldwide, so that they now include, or expand further, information on subjects such as diet and nutrition, lifestyle factors, and other aspects involving social and spiritual dimensions.

There is also an increasing amount of attention being directed at the role of medical education internationally and locally in the light of the probable changes in the provision of healthcare for the population, and this is reflected in the burgeoning literature on the subject. The debate on medical education centres in part around the recognition for the need of a holistic approach, which if adopted, would necessitate substantial changes to the present curriculum. These would be required in order to ensure greater emphasis on community health and family medicine, rather than on

academic research and furthering advances in technology-based education. The inclusion of complementary medicines into current medical curricula is one route for the introduction of an holistic approach towards orthodox bio-medicine, which has, arguably, become too technical in focus and mechanistic in nature.

6.3. Summary of the study

From the results documented in Chapter Four, it appears that the philosophical principles of Unani-Tibb integrated into the training programme of orthodox healthcare professionals were readily understood by most of the participants. Overall, they considered that it provided improved understanding of the causes of illnesses, introduced additional treatment options and allowed for easy integration into their practice.

The training of healthcare practitioners in the theory and practice of Unani-Tibb by means of an interactive module-based twelve month training programme with strictly defined outcomes, and supplemented with a research project, can be regarded overall as being successful. The participants generally responded positively to the course format, material and evaluations. This augurs well for future activities along the same lines. The outcome of the participants' research project clearly illustrated the benefit of this integrative programme to healthcare professionals in enabling them to provide to their patients efficient, cost effective and appropriate (as measured by the Quality of Life parameters) healthcare.

A number of unanticipated features appeared during the course of the study.

- One encouraging observation was the readiness with which the participants accepted the main tenets of Unani-Tibb, and the possibility of integrating it into the South African healthcare scenario, without any major disagreements or contradictions arising. A possible reason for this is that most were already familiar with the basic concepts, as the doctrine embodied in Unani-Tibb is not incompatible with other medical philosophies. There is a lot in common with the early days of orthodox bio-medicine, and a substantial degree of overlap with African Traditional medicine, as discussed in Chapter Two.

- Another observation is the perceived accuracy of the results of this admittedly limited pilot study with respect to the principles of temperament in Unani-Tibb. As there is no documented research available validating this principle, the results of the correlation between temperament and specific disorders, as reported in the previous chapter, are of considerable interest *(see Table10, page 149)* . The results highlight the value of the relationship between temperament and specific illness conditions, and will hopefully stimulate additional research into this area.

- Yet another observation was the ease with which the participants were able to understand the programme. The initial concern that the philosophy of Unani-Tibb would be difficult to comprehend and accept by practitioners already trained in the precepts of orthodox bio-medicine proved to be unfounded. It was interesting to note that so many unanswered questions of aetiology, as well as why certain treatments work, were able to be answered during the interactive group discussions and participant feedback (s*ee Chapter Four, page 119-123*).

6.4. Significance of the results

This pilot study suggests that the principles and practice of Unani-Tibb can be successfully integrated into the practice of orthodox biomedical healthcare without major adjustment. The value of this integrative training programme has without doubt enabled the participants to provide effective, affordable and appropriate healthcare. Such an integrative programme could therefore have far reaching benefits in improving the quality of healthcare delivery and more importantly have major positive financial implications.

This study is relevant to South Africa, in the light of the challenges facing the country with the enormous requirements for health provision, in the context of limited resources. The general adoption of a health system based solely upon orthodox bio-medicine is clearly not going to be affordable or even effective. For most patients treated in this country, the diagnostic and investigative techniques alone are escalating alarmingly, and the financial impact of treatment with many drugs, especially those recently introduced, is prohibitively expensive even for the high-income stratum of our society. Fully introducing orthodox bio-medicine would exhaust the financial capacity of this country - and, arguably, most developing countries. This is a major prohibitive factor in a society where a high proportion of the population is still chronically under-nourished,

poorly housed and deprived of up-to-date educational facilities. Even if the steady improvement made in these Quality of Life parameters over the last few years is maintained into the immediate future, it is unlikely that the widespread adoption of orthodox bio-medicine will occur. Successfully integrating the concepts of Unani-Tibb into orthodox bio-medicine will have a significant impact on the cost factor.

Many of the participants in the study felt that the integration of Unani-Tibb into the present medical practice would be one appropriate way to confront the many challenges faced in opening up the availability of quality, cost-effective healthcare to the population as a whole *(Chapter Five, page 159)*. Again, further studies would be needed to confirm and quantify the benefits of this integration

The Quality of Life issue is of paramount importance to medical policy makers, for several reasons. Arguably the main one is that if therapy intrudes negatively on a patients lifestyle, either by short-term effects (such as adverse drug reactions like impotence, weight gain or depression) or longer-term metabolic changes (raised cholesterol or blood sugar levels, for instance), then the therapy is likely to be discarded in favour of one which does not lead to these undesirable side effects. Alternatively, the patient will withdraw from formal treatment completely, and place his or her disease management in the hands of possibly unqualified healthcare practitioners or resort to self-medication. Whatever the path chosen, the outcome is a patient lost to treatment, and the subsequent risk of a poor medical outcome. The integration of Unani-Tibb into the programme appears to have had a meaningful improvement in the patients' Quality of Life, as revealed by marked changes in the parameters measured. Again, this observation, which was noted in this pilot study, needs to be confirmed and quantified in a further, statistically rigorous study with more patients and objective criteria applied in a strictly controlled manner.

6.5. Implications for policy and practice of medical education

The study has highlighted the benefits of an integrative programme of medical care. Reasons for the success of the programme were that it was more effective than previously applied orthodox bio-medical care, and offered substantial cost benefits. Another reason was that it was perceived by the participant as being an appropriate medical system in the South African context.

This appropriateness encompassed the fact that it recognised and accepted the cultural and spiritual needs of most of the participants and patients. In doing so, it highlighted the need for a model of medical care and education that openly identifies and encompasses the cultural and spiritual aspects inherent in the healing processes of many clinical conditions.

Changes to orthodox bio-medical education that openly accepts the holistic, cultural and spiritual aspects of the community it ultimately aims to serve, has to be an essential component for future curricula content. However, there are presently no clear guidelines for the training of licensed healthcare professionals in this sphere of medicine. Familiarisation with these aspects of medicine needs to start in medical schools and other centres of higher medical learning.

The obvious question that should be asked now is: can the success reported in integrating Unani-Tibb with orthodox bio-medicine in this pilot study be extended to integrating orthodox bio-medicine with other complementary medical systems - and more significantly with African Traditional medicine? As discussed earlier, complete integration between African Traditional medicine and orthodox bio-medicine will be fraught with difficulty, as they are based upon radically different theories of health and disease and admit to different worldviews. What is possible, however, is that the two systems could continue to run in parallel, while at the same time, the positive aspects from orthodox bio-medicine could be formally introduced into African Traditional medicine, so as to enhance its clinical efficacy and safety (Leclerc & Madlala, 2002). Initiatives in this regard must be forthcoming, especially when we note that, as noted in Chapter Two something like 80% of the country still makes use of traditional medicine, especially in the rural areas.

Also, many medical students from previously disadvantaged communities have very strong feelings of superstition and supernatural forces (Van Rensburg et al, 1992), so the traditional element of present day healthcare is bound to be perpetuated. However, whilst we may predict that the full integration between African Traditional medicine and orthodox bio-medicine is not possible in the foreseeable future at least, it is important to recognise the fact that the country will ultimately require a system of healthcare in which certain aspects of integration may not only be desired, but also become necessary. Further research is needed in this area of healthcare provision and should be seriously considered by planners and decision-makers in the South African healthcare arena.

The relative ease of the integration of Unani-Tibb with orthodox bio-medicine to doctors and nurses also augurs well for the expansion of the programme to other healthcare professionals with

orthodox training such as pharmacists and dieticians. Moreover, additional tiers of healthcare workers who are qualified with Unani-Tibb credentials can be developed over the next few years. These would include Unani-Tibb primary health care therapists, and Unani-Tibb advisors (home-based care workers).

6.6. Limitations of the research

The study, though limited by the factors outlined below, has shown the value of integrating the philosophical principles of Unani-Tibb into the training of healthcare professionals with respect to clinical efficiency, cost effectiveness and Quality of Life. However, the thesis would not be complete without a review of the various deficiencies, whether logistic, structural or operational. The study is a pilot study, which almost by definition is exploratory in nature, and does not lay claim to firm conclusions. As such, there are a number of limitations which need to be rectified in future studies.

The main ones identified are:

- *Participant competence*. Ideally, in setting up a study such as this, a document equivalent to a clinical trial protocol should be drawn up, for perusal by the participants, and modified according to their feedback. It would define, *inter alia*, entry and exclusion criteria for the patients; definitions of the clinical conditions to be investigated; data recording processes; criteria for the objective assessment of response-to-treatment; and numbers needed for a sound statistical evaluation. In addition, the use of study participants without experience in the theory and good clinical practice involved in clinical research could have undermined the validity of the study.

- *Objectivity*. With the benefit of hindsight, a greater degree of objectivity should have been built into the programme design, conduct, data collection and assessment. This would have reduced the possible lack of objectivity or even bias. In particular, the interpretation of the data could well have been skewed by my personal involvement in the study. Again, the selection of particular clinical conditions for evaluation in the study could have been influenced.

- *Interpretation of the Quality of Life questionnaire.* This parameter of the integrative training programme clinical efficacy and appropriateness should actually have been field tested before the study proper. As a technique which was devised especially for the study, and which was unfamiliar to both participants and organisers, some practical experience of its meaning and measurement should have been accrued before applying it to the study proper.

- *Number of patients:* The relatively small number of patients who were recruited into the research project. Although the results did uncover trends favouring Unani-Tibb, the small numbers studied precluded a meaningful statistical analysis and firm conclusion.

- *Range of clinical disorders:* The number of clinical disorders selected by the participants should, in retrospect, be limited to three or four. This would allow for better analysis of efficacy and cost effectiveness in particular. In mitigation, however, this study was not investigating the effect of applying the principles and practice of the integrative training programme to one specific clinical condition, but to the range of disorders that are routinely encountered at the primary health care level.

- *Access to patients:* Future courses on the integrative training programme should ensure that the participants are occupationally able to implement the programme in their everyday practice. It became evident, for instance, that participants who were employed in hospitals or clinics had to recruit patients in their private capacity, or team up with other participants who had their own practice. Not unexpectedly, these participants encountered difficulties in fully implementing this integrative training programme into practice.

- *Availability of Unani-Tibb medication:* The participants were restricted to a limited choice of Unani-Tibb medication available in the country at the time of the study. This limited choice of medication most likely had a negative impact on the outcome of treatment of a wider range of illnesses.

- *Assessment*. In retrospect it would have been advantageous to have outside, neutral agents comment on the study design, execution and assessment prior to the study being undertaken. This would have contributed to a greater degree of objectivity. In mitigation it should be

mentioned that the study was under considerable time pressure, and the availability of persons competent in this field is strictly limited.

6.7. Further research

As with all projects of this nature, there are more questions than answers. The outcome of this and future studies may have important and far reaching consequences for the progress of medical education and healthcare in this country. Common to all research of this nature, it is necessary to reproduce these results in greater detail to ensure statistical validity. Future research areas could include (a) expanding the concept and practicality of integrating different healthcare models; (b) expansion of the practical relevance and validity of the principles of Unani-Tibb, such as temperament; and (c) study of the comparative effectiveness and cost-benefit of Unani-Tibb treatment for specific illnesses relevant to the South African context.

6.7.1. Integration into other healthcare models

One obvious follow-up study would be to assess whether there can be a beneficial interaction between African Traditional medicine and Unani-Tibb. On the face of it, there is some reason for optimism, as both medical systems have several concepts in common. Specifically they share in many ways a common worldview regarding the spiritual or metaphysical nature of mankind, humoral influences in the causality of health and disease, and the inter-relationship between the cosmos and self. Moreover, the search for health in both systems is found by supporting the patient in dealing with external malign influences.

6.7.2. Research on philosophical Unani-Tibb principles

When the pioneers of Unani-Tibb developed, with remarkable foresight, their philosophical principles, they were able to rationalize the causes of illnesses and justify the subsequent treatment applied according to the fundamentals of the humoral and temperamental theories at the time in which they lived. Obviously, they did not have access to today's sophisticated technology. Given the opportunity to apply this new technology, would the pioneers of Unani-Tibb be able to validate these principles? Although this may appear to be a rhetorical question, the pilot study and reports contained in the literature surveyed has indicated that there is some merit, albeit inconclusive, of

some of these principles being confirmed by modern technology. This observation indicates that investigating Unani-Tibb's original theories and founding principles of health and disease with the clinical technology now available to us would provide a fertile field for future research.

Today's technology and the tried and tested research approach of modern medicine can develop protocols with clearly defined parameters that can effectively measure the outcomes of these research activities.

I would like to suggest the following specific areas of research:

- The relationship between temperament, structure and function of different organs.
- The relationship between each of the governing factors within the context of the qualities that they exert on the maintenance of health and in the treatment of illnesses.
- The re-evaluation of a number of eliminative techniques used in Unani-Tibb and some of which are also common to African Traditional medicine. For example, do procedures such as cupping, venesection, purging and sweating have a part to play in treatment today?

However, it is absolutely essential to ensure that studies in this sphere of healthcare have not already been carried out. A full and detailed review and critique of these areas of research would be a major prerequisite to future research activities.

6.7.3. Research of Unani-Tibb protocols for specific conditions

The Unani-Tibb approach to illness conditions can be further divided into the following categories, with a number of options for further investigation listed:

(1) AIDS related illnesses

- The role of Unani-Tibb treatment for HIV and AIDS using lifestyle changes (especially diet, but excluding medication).
- The role of Unani-Tibb treatment (including medication) for HIV and AIDS.

- Evaluating the probability of HIV-positive individuals progressing to full blown Aids in the light of the temperamental theory.

- Evaluating patients who suffer from both HIV and AIDS and tuberculosis with respect to the bilious temperament.

(2) Chronic illness conditions

- The role of a Unani-Tibb protocol in chronic ailments could be explored. Its effectiveness with respect to diabetes, hypertension, hypercholesterolaemia and other chronic ailments could be researched.

(3) Unani-Tibb and primary health care

- Primary health care is one of the pillars of the White Paper (1997), and is most likely to assume greater importance in the near future. Currently it focuses mainly on immunization, sanitation and prenatal care. This limited range of activities could be expanded without a great deal of expense by introducing the concept of the governing factors. Integration of this and maybe other principles of Unani-Tibb into the primary health care arena would result in a model that will not only enhance primary health care but also lead to empowerment of patients.

(4) Unani-Tibb and nutrition

- A diet which has been customized for a patient usually has to take into account his or her physical make-up and psychological character. Training dieticians in the important principles of temperament, a measure which integrates the personality and constitution of an individual, could conceivably have a positive influence on enhancing the current practice of dieticians, with subsequent clinical benefit.

6.8. Overall conclusions

This pilot study suggests that integrating the appropriate elements of Unani-Tibb philosophy with its holistic principles of disease prevention and health maintenance is a potent formula that can be used to enhance the practice of orthodox bio-medicine. Moreover, the study has shown that this integrative programme has the potential of being well received by the populace at large as it may be able to identify with their cultural and spiritual needs. This programme can be developed further into a more appropriate healthcare programme for South Africa, and potentially support the African renaissance in health education and care. The implications of such a paradigm shift in healthcare for South Africa are important and far reaching.

The results from this study suggest that the formal integration of Unani-Tibb into the practice of previously orthodox medically trained doctors, nurses and other healthcare workers could provide them with additional insights that could conceivably be of substantial value in providing affordable, effective and appropriate health care for all South Africans.

As Lee concludes:

> Looked at objectively, the challenge of providing a comprehensive, equitable and accessible health service for the entire population of South Africa is formidable in the extreme…… At its best, standards [of orthodox bio-medicine] are high, and the system does work, but only selectively and sporadically. Too many adrift in the sea of poverty and deprivation ……. The reality is very different. What is urgently needed now is a positive approach towards improving the situation (Lee, 1991 in Van Rensburg et al, 1992:399).

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APPENDIX I

TOTAL HEALTH EXPENDITURE PER COUNTRY FOR YEARS 1997-2000 AS PER THE WORLD BANK (http://www.worldbank.org)				
	SHARE % OF TOTAL			HEALTH
		HEALTH EXPENDITURE		EXPENDITURE
COUNTRY	TOTAL % OF GDP	Public	Private	PER CAPITA ($)
	1997 – 2000a	1997 - 2000a	1997 – 2000a	1997 – 2000a
Afghanistan	1.0	63.5	36.5	8.0
Albania	3.4	62.1	37.9	41.0
Algeria	3.6	82.2	17.8	64.0
Angola	3.6	55.9	44.1	24.0
Argentina	8.6	55.0	45.0	658.0
Armenia	7.5	42.3	57.7	38.0
Australia	8.3	72.4	27.6	1698.0
Austria	8.0	69.7	30.3	1872.0
Azerbaijan	0.9	75.1	24.9	7.6
Bangladesh	3.8	36.4	63.6	14.0
Belarus	5.7	82.8	17.2	57.0
Belgium	8.7	71.2	28.8	1936.0
Benin	3.2	50.0	50.0	11.0
Bolivia	6.7	72.4	27.6	67.0
Bosnia and Herzegovina	4.5	69.0	31.0	50.0
Botswana	6.0	63.1	36.9	191.0
Brazil	8.3	40.8	59.2	267.0
Bulgaria	3.9	77.6	22.4	59.0
Burkina Faso	4.2	70.7	29.3	8.0
Burundi	3.1	53.1	46.9	3.0
Cambodia	8.1	24.5	75.5	19.0
Cameroon	4.3	24.7	75.3	24.0
Canada	9.1	72.0	28.0	2058.0
Central African Republic	2.9	48.4	51.6	8.0
Chad	3.1	79.8	20.2	6.0
Chile	7.2	42.6	57.4	336.0
China	5.3	36.6	63.4	45.0
Hong Kong, China	..	..	..	..
Colombia	9.6	55.8	44.2	186.0
Congo, Dem. Rep.	1.5	73.7	26.3	9.0
Congo, Rep.	2.2	70.2	29.8	22.0
Costa Rica	6.4	68.4	31.6	273.0
Côte d'Ivoire	2.7	36.9	63.1	16.0
Croatia	10.0	80.0	20.0	434.5
Cuba	6.8	89.2	10.8	169.0
Czech Republic	7.2	91.4	8.6	358.0
Denmark	8.3	82.1	17.9	2512.0
Dominican Republic	6.3	28.0	72.0	151.0
Ecuador	2.4	50.4	49.6	26.0
Egypt, Arab Rep.	3.8	46.1	53.9	51.0
El Salvador	8.8	43.0	57.0	184.0
Eritrea	4.3	65.6	34.4	9.0
Estonia	6.1	76.7	23.3	218.0
Ethiopia	4.6	39.4	60.6	5.0

Finland	6.6	75.1	24.9	1559.0
France	9.5	76.0	24.0	2057.0
Gabon	3.0	68.6	31.4	120.0
Gambia, The	4.1	82.4	17.6	10.0
Georgia	7.1	10.5	89.5	41.0
Germany	10.6	75.1	24.9	2422.0
Ghana	4.2	53.5	46.5	11.0
Greece	8.3	55.5	44.5	884.0
Guatemala	4.7	47.9	52.1	79.0
Guinea	3.4	57.1	42.9	13.0
Guinea-Bissau	3.9	65.4	34.6	9.0
Haiti	4.9	49.3	50.7	21.0
Honduras	6.8	63.1	36.9	62.0
Hungary	6.8	75.7	24.3	315.0
India	4.9	17.8	82.2	23.0
Indonesia	2.7	23.7	76.3	19.0
Iran, Islamic Rep.	5.5	46.3	53.7	258.0
Iraq	3.7	59.9	40.1	375.0
Ireland	6.7	75.8	24.2	1692.0
Israel	10.9	75.9	24.1	2021.0
Italy	8.1	73.7	26.3	1498.0
Jamaica	5.5	47.0	53.0	165.0
Japan	7.8	76.7	23.3	2908.0
Jordan	8.1	51.8	48.2	137.0
Kazakhstan	3.7	73.2	26.8	44.0
Kenya	8.3	22.2	77.8	28.0
Korea, Dem. Rep.	2.1	77.3	22.7	18.0
Korea, Rep.	6.0	44.1	55.9	584.0
Kuwait	3.0	87.2	12.8	586.0
Kyrgyz Republic	4.3	49.8	50.2	12.0
Lao PDR	3.4	38.0	62.0	11.0
Latvia	5.9	60.0	40.0	174.0
Lebanon	12.4	20.0	80.0	499.0
Lesotho	6.3	82.3	17.7	28.0
Liberia	4.0	76.2	23.8	2.0
Libya	3.3	48.6	51.4	246.0
Lithuania	6.0	72.4	27.6	185.0
Macedonia, FYR	6.0	84.5	15.5	106.0
Madagascar	3.5	71.8	28.2	9.0
Malawi	7.6	47.8	52.2	11.0
Malaysia	2.5	58.8	41.2	101.0
Mali	4.9	45.5	54.5	10.0
Mauritania	4.3	79.3	20.7	14.0
Mauritius	3.4	56.3	43.7	134.0
Mexico	5.4	46.4	53.6	311.0
Moldova	3.5	82.4	17.6	11.0
Mongolia	6.6	70.3	29.7	23.0
Morocco	4.5	29.6	70.4	50.0
Mozambique	4.3	63.4	36.6	9.0
Myanmar	2.2	17.1	82.9	153.0
Namibia	7.1	59.3	40.7	136.0
Nepal	..	..	..	..
Netherlands	8.1	67.5	32.5	1900.00
New Zealand	8.0	78.0	22.0	1062.0
Nicaragua	4.4	51.7	48.3	43.0

Niger	3.9	44.9	55.1	5.0
Nigeria	2.2	20.8	79.2	8.0
Norway	7.8	85.2	14.8	2832.0
Oman	2.8	82.9	17.1	295.0
Pakistan	4.1	22.9	77.1	18.0
Panama	7.6	69.2	30.8	268.0
Papua New Guinea	4.1	88.6	11.4	31.0
Paraguay	7.9	38.3	61.7	112.0
Peru	4.8	59.2	40.8	100.0
Philippines	3.4	45.7	54.3	33.0
Poland	6.0	69.7	30.3	246.0
Portugal	8.2	71.2	28.8	862.0
Puerto Rico	..	..	..	..
Romania	2.9	63.8	36.2	48.0
Russian Federation	5.3	72.5	27.5	92.0
Rwanda	5.2	51.3	48.7	12.0
Saudi Arabia	5.3	79.1	20.9	448.0
Senegal	4.6	56.6	43.4	22.0
Sierra Leone	4.3	60.0	40.0	6.0
Singapore	3.5	35.7	64.3	814.0
Slovak Republic	5.9	89.6	10.4	210.0
Slovenia	8.6	78.9	21.1	788.0
Somalia	1.3	71.4	28.6	19.0
South Africa	8.8	42.2	57.8	255.0
Spain	7.7	69.9	30.1	1073.0
Sri Lanka	3.6	49.0	51.0	31.0
Sudan	4.7	21.2	78.8	13.0
Swaziland	4.2	72.1	27.9	56.0
Sweden	8.4	77.3	22.7	2179.0
Switzerland	10.7	55.6	44.4	3573.0
Syrian Arab Republic	2.5	63.4	36.6	30.0
Tajikistan	3.3	30.0	70.0	5.8
Tanzania	5.9	47.0	53.0	12.0
Thailand	3.7	57.4	42.6	71.0
Togo	2.8	54.3	45.7	8.0
Trinidad and Tobago	5.2	50.7	49.3	268.0
Tunisia	5.5	52.0	48.0	110.0
Turkey	5.0	71.1	28.9	150.0
Turkmenistan	5.4	84.9	15.1	52.0
Uganda	3.9	38.0	62.0	10.0
Ukraine	4.1	70.1	29.9	26.0
United Arab Emirates	3.2	77.7	22.3	767.0
United Kingdom	7.3	81.0	19.0	1747.0
United States	13.0	44.3	55.7	4499.0
Uruguay	10.9	46.5	53.5	653.0
Uzbekistan	5.3	50.0	50.0	29.3
Venezuela, RB	4.7	57.4	42.6	233.0
Vietnam	5.2	25.8	74.2	21.0
West Bank and Gaza	..	..	..	..
Yemen, Rep.	4.9	43.0	57.0	20.0
Yugoslavia, Fed. Rep.	5.6	51.0	49.0	50.0
Zambia	5.6	62.1	37.9	18.0
Zimbabwe	7.3	42.6	57.4	43.0
	SHARE % OF TOTAL			**HEALTH**

	HEALTH EXPENDITURE			EXPENDITURE
	TOTAL % OF GDP	Public	Private	PER CAPITA ($)
	1997 – 2000a	1997 – 2000a	1997 – 2000a	1997 – 2000a
World	9.3	59.4	40.6	482.0
Low income	4.3	27.1	72.9	21.5
Middle income	5.9	51.8	48.2	116.4
Lower middle income	5.3	49.4	50.6	72.3
Upper middle income	6.6	54.2	45.8	308.9
Low & middle income	5.6	47.6	52.4	70.9
East Asia & Pacific	4.7	38.6	61.4	44.3
Europe & Central Asia	5.5	72.4	27.6	108.1
Latin America & Carib.	7.0	47.6	52.4	262.0
Middle East & N. Africa	4.6	61.9	38.1	171.5
South Asia	4.7	20.8	79.2	21.4
Sub-Saharan Africa	6.0	42.4	57.6	29.1
High income	10.2	62.2	37.8	2736.5
Europe EMU	9.1	73.4	26.6	1808.5
a) Data are for the most recent year available. b) Less than 0.05. c) Less than 0.5. d) Data are for 2001.				

APPENDIX II

Unani-Tibb Diploma for Health Care Professionals

Motivation for enrolment on the Programme

We would like to know the reason(s) which encouraged you to enroll on this Programme.

This information will help us to make adjustments to the contents and emphasis of the topics contained within the Programme, in order to satisfy better your personal objectives and requirements.

Please indicate, in diminishing order of importance, the possible reasons listed below. For example, if "Personal empowerment" was your main reason, place "1" in the box alongside this item. If the secondary reason was "Better earning potential", then place "2" against this item. And so on.

(Please only choose 5 reasons.)

Possible reasons:

☐ The Programme will increase my professional earning potential

☐ I am disillusioned with the efficacy of the treatment I am presently offering.

☐ I am aware of the move from orthodox/scientific medicine towards complementary or holistic healing, and feel I need to know more about the latter.

☐ I would like to become a proponent of complementary or holistic healing, as I feel this is more appropriate to the South African medical care scenario.

☐ I would like to know more about this medical discipline as part of my personal academic or clinical development.

☐ I am very aware of the escalating cost of orthodox medical care, and would like to explore an alternative healing approach that the Programme embodies.

☐ I would like to know more about Unani—Tibb, as my patients are increasingly enquiring about alternative medical treatment of their clinical disorders.

☐ I have a personal health problem which has not responded satisfactorily to orthodox medical treatment, and would like to examine a practical alternative therapy.

Current profession (*underline appropriately*):
orthodox/homoeopathic doctor / primary health care nurse.....

APPENDIX III

UNIVERSITY *of the* WESTERN CAPE
DEPARTMENT OF RESEARCH DEVELOPMENT

UWC RESEARCH PROJECT REGISTRATION AND ETHICS CLEARANCE APPLICATION FORM

This application will be considered by UWC Faculty Board Research and Ethics Committees,
then by the UWC Senate Research Committee, which may also consult outsiders on ethics questions, or consult the UWC ethics subcommittees, before registration of the project and clearance of the ethics. No project should proceed before project registration and ethical clearance has been granted.

A. PARTICULARS OF INDIVIDUAL APPLICANT				
NAME: **Rashid Ahmed Hassen Bhikha** TITLE: **Mr**				
DEPARTMENT: **School of Natural Medicine** FACULTY: **Faculty of Community & Health Sciences**				
FIELD OF STUDY: **Complementary Medicine**				
ARE YOU:				
A member of UWC academic staff?	Yes	**X**	No	☐
A member of UWC support staff?	Yes	☐	No	☐
A registered UWC student?	Yes	**X**	No	☐
From outside UWC, wishing to research at or with UWC?	Yes	☐	No	☐

B. PARTICULARS OF INDIVIDUAL APPLICANT

PROJECT NUMBER: TO BE ALLOCATED BY THE SENATE RESEARCH COMMITTEE:

EXPECTED COMPLETION DATE: **February/March 2004**

PROJECT TITLE:
Comparative evaluation of different clinical conditions (*see attached list*) from the perspective of Unani-Tibb

THREE KEY WORDS DESCRIBING PROJECT**: Comparative analysis; Unani-Tibb; allopathic.**

PURPOSE OF THE PROJECT: **Departmental research**

M-DEGREE: D-DEGREE:

POST GRADUATE RESEARCH:

C. PARTICULARS REGARDING PARTICULAR RESEARCHERS

	FAMILY NAME	INITIALS	TITLE
PRINCIPAL RESEARCHER:	**BHIKHA**	**R.A.H.**	**MR**
OTHER RESEARCH PROJECT LEADERS	**HAQ**	**H.M.**	**DR**
	GLYNN	**J.P.**	**DR**

OTHER CO-RESEARCHERS: **SEE ATTACHED LIST OF STUDENTS**

THESIS: STUDENT RESEARCHER:

THESIS: SUPERVISOR:

D. GENERAL INFORMATION

STUDY LEAVE TO BE TAKEN DURING PROECT (days): **N/A**

IS IT INTENDED THAT THE OUTCOME WILL BE SUBMITTED FOR PEER REVIEWED PUBLICATION?

YES **X** NO ☐

COMMENTS: DEPARTMENTAL CHAIRPERSON:

SIGNATURE OF THESIS STUDENT RESEARCHER – WHERE APPROPRIATE:

DATE

SIGNATURE OF THESIS SUPERVISOR – WHERE APPROPRIATE:

DATE

SIGNATURE OF PRINCIPAL RESEARCHER – WHERE APROPRIATE:

DATE:

SIGNATURE OF DEPARTMENTAL CHAIRPERSON:

DATE:

NOTE: THESE SIGNATURES IMPLY AN UNDERTAKING *BY THE RESEARCHERS* TO CONDUCT THE RESEARCH ETHICALLY, AND AN UNDERTAKING BY THE THESIS SUPERVISOR (WHERE APPROPRIATE), AND THE DEPARTMENTAL CHAIRPERSON, TO MAINTAIN A RESPONSIBLE OVERSIGHT OVER THE ETHICAL CONDUCT OF THE RESEARCH.

E. DESCRIPTION OF PROJECT AND RESEARCH ETHICS STATEMENT

Please type below, or attach a typed document, usually between 500 and 5000 words, setting out the purpose and process of the research. Please include a clear research ethics statement. The onus is on the applicant to persuade UWC that the research will be conducted ethically. This will normally require evidence of an up to date research ethics literature search in the particular discipline; evidence of what the world standard ethical practice is, in the particular discipline; an explanation of how the proposed research is to be conducted ethically; a detailed justification of any proposed departure from world standard ethical practice; and a clear undertaking to conduct the research ethically. It may be useful also to agree to conduct the research in line with the published ethical rules of a national or international disciplinary association. UWC reserves the right to stop or suspend any research undertaken by its staff or students, or by outsiders on its property or in association with it, if the research appears to be unethical.

(SEE ATTACHED PROPOSAL)

Form issued by: Professor Renfrew Christie, UWC Dean of Research, February 2002.

(959 2949; 959 2948 secretary, 959 3170 fax, email: rchristie@uwc.ac.za)

UNIVERSITY OF THE WESTERN CAPE
Faculty of Community and Health Sciences

School of Natural Medicine

ABSTRACT
RESEARCH PROJECT

Keywords:

Comparative analysis; Unani-Tibb; allopathic; aetiology; pathological processes; diagnostic techniques; disease management; integration; cost effective.

1. Introduction

The students admitted to the Post-graduate Diploma in Unani-Tibb medicine are in active practice, diagnosing and treating patients in a cross section of communities covering varied illnesses. During the second half of the course, covered by modules 7-11, students have been integrating Unani-Tibb principles into their practice and applying them to their patients. The students will focus on a specific illness condition to illustrate their understanding of the course content as well as whether the integration of Unani-Tibb into their practice has been beneficial to them as well as their patients.

2. Aims and objectives of the study

This descriptive study will highlight any advantages in the integration of the Unani-Tibb insights into the practice of the Healthcare Professionals with respect to diagnosis and treatment. It will also measure the benefits to the patient in terms of cost effectiveness as well as quality of life.

Specific objectives are to:

1. describe clinical outcomes for patients with different disease conditions treated by Unani-Tibb
2. describe practice outcomes for Health Care Practitioners integrating Unani-Tibb into practice
3. assess “Quality of Life” of patients treated by integrating Unani-Tibb principles into practice
4. assess cost-benefit to patients treated by integrating Unani-Tibb principles into practice

3. Research methods and instruments

3.1. Study design

Descriptive study

3.2 Study sample

At least 5 patients per student from one of the listed disease conditions (drug addiction, psoriasis, HIV/AIDS, paediatric haematology, hypertension, eczema, diabetes, arthritis, gout, sinusitis, menopause, asthma, peptic ulcer) will be purposefully selected to be included in the study. The number of contacts to be made with the patient, and over what period of time, would be at the discretion of the Health care practitioner as required by the disease condition.

3.3. Measurements

The following information will be obtained from each patient:

- A submitted personality evaluation form to confirm dominant/subdominant temperament.
- A detailed medical history of the patient
- **Aetiology:** comments from the patients as to the cause of his/her illness condition, in order to ensure patient participation. This will entail a direct review of the patient's lifestyle.
- **Diagnosis**: signs & symptoms, presenting complaints and clinical observations which are indicative of the overall illness frame associated with the patient at the time of the visit (understandably different symptoms may fall in different frames, however it is important to assess the overall qualities or frame/s associated with the patient at the time of the visit)
- **Pathology:** whether the condition/s are from Pathway 1 (acute) or 2 (chronic). In this section there should be an interpretation of the pathological process from the Unani-Tibb perspective with respect to the underlying qualities which are the cause of the problem
- **Treatment management:**
    - Temperament frames to be used
    - Lifestyle changes to Governing Factors with special attention paid to recommended dietary guidelines
    - Recommended Regimental Therapies
    - Details of medication
- Outcome and comments: to establish a meaningful outcome in chronic patients it is suggested that their treatment extends over at least 4-8 Weeks. Acute conditions can be assessed earlier. We would like you to comment briefly on the outcome whether positive or negative.

3.4. Timeframe for the study

The research project will take place over a 5 month period.

4. Ethics statement

This proposed study will involve the active and willing involvement of all participants. It will be conducted according to accepted ethical practice. This includes:

4.1. A discussion with the patient on the value of the study

4.2. Informed consent by the patient after reasonable explanation of his or her involvement in the study.

4.3. An assurance to the patient of full confidentiality regarding his or her clinical condition, and treatment and outcome information. The patient's name will not be included in the project text.

4.4. The option to the patient to withdraw from any stage of the study without explanation. All patients will be aware that they are free to discontinue their active involvement in this study, without prejudice.

4.5. There will be no physical involvement of the participants that expose them to physical or mental trauma. Clinical action if the patient is traumatized, either physically or emotionally will be detailed.

References

1. lbn Sina Institute of Tibb. 2003. Diploma in Unani-Tibb (modules l-11), Johannesburg, South Africa.
2. Jamia Hamdard. 1993. Al-Qanun Fi"l-Tibh. New Delhi.
3. O.C. Gruner. 1929. A Treatise on the Canon of Medicine of Avicenna. London.
4. R. Bhikha & M.A.I-laq.'2000. Tibb - Traditional Roots of Medicine in Modern Routes to Health. South Africa.

LIST OF STUDENTS AND THEIR RESEARCH TOPICS

NO	NAME	STUDENT NO	RESAERCH TOPIC
1	Dr Aziza Randeree	2361383	Drug addiction
2	Dr Haroon Rashid Elias	2361497	Psoriasis
3	Nomcebo Primrose Luthuli	2361600	Eczema
4	Dr Manfred Liebenguth	2369573	Hypertension
5	Siphiwe Ordinance Mkhize	2361406	Hypertension
6	Dr Ebrahim Haffejee	2369599	Hypertension
7	Busisiwe Mazibuko	2361594	Diabetes
8	N. Glenrose Mseleku	2361618	Diabetes
9	Florence Jara	2361414	Diabetes
10	Coreen Sikhakhane	2361642	Diabetes
11	Dr Zubeida Mayet	2361552	Asthma
12	S. Mildred Mosepele	2361503	Asthma
13	Laurretta Mnyamane	2369701	Mental disorders
14	Dr Ayesha Cassim Bassa	2361391	Menopause
15	Dr Rukaya Hoosen	2370747	Stress
16	Flangeni Manxiwa	2361537	Rheumatoid Arthritis
17	Dr Mohammed Aqeel Thokan	2361430	HIV/AIDS
18	Dr Mahomed Jassat	2369565	HIV/AIDS
19	Meisie Elizabeth Nthoesane	2361755	Diarrhoea
20	Dr Suraya Khan	2369696	Arthritis
21	Dr Yasmin Goga	2369557	Obesity
22	Florence Kgowana	2369735	Hypertension
23	Bronwyne Bellars	2369540	Arthritis
24	Dr Mahomed Bayat	2361560	Menopause

APPENDIX IV

Confidential

PATIENT BIOGRAPHICAL INFORMATION QUESTIONNAIRE

Patient no. _____ **Date of completion: _____200_____**

Read the ensuring statements and/or questions regarding the biographical information of the PATIENT. Mark your response with a X in the appropriate space. If a question is NOT APPLICABLE leave it open.

1. Gender	Male	Female

2. State your **age**:
_____

3. Are you currently:	single	Engaged or in a close relationship	married	divorced	separated	widow or widower	Re-married

4. Indicate your **highest** level of education. Mark with an **"X"**:

Lower than Std 6/Gr 8	
Lower than Std 10/Gr 12	
Std 10/Gr 12	
Certificate qualification specify: _____	
Diploma qualification, specify: _____	
Bachelor's degree specify: _____	
Master's Degree	
Doctoral Degree	
Other (specify)	

5. Indicate your ethnic group:

Indian	
Coloured	
Black	
White	
Other, Specify _____	

Patient Biographical Information Questionnaire

6. What is your **current occupation** and/or employment status?

---

7. What is your **monthly income**?

Less than R100-00 per week	
Between R101-00 and R500-00 per month	
Between R501-00 and R1000-00 per month	
Between R1001-00 and R3000-00 per month	
Between R3001-00 and R6000-00 per month	
Between R6001-00 and R10 000-00 per month	
Between R10 001-00 and R20 000-00 per month	
More than R20 000-00 per month	

8. How often do you visit a **medical and/or health service provider**?

Daily	
Once a week	
More than once a week	
Once a month	
Twice or more a month	
Once every three months	
Once every six months	
Once a year	
Never	

9. How many times in the last two years have you been hospitalized? **Specify the reasons for hospitalization**.

---

10. If you've been diagnosed with any **chronic conditions (long term illness)**, list those conditions:

---

11. If you take any **medicine on a regular basis** (prescription or self-medication), please list them:

_____

_____

_____

_____

_____

_____

_____

_____

_____

12. Estimate your **monthly health expense** (this includes doctors consultation fee, and medicine)

_____

_____

13. Do you have **medical insurance/medical aid**?

Yes	**No**

If **yes**, specify the name: _____

What is your **monthly premium**? _____

14. Briefly state the **reasons for your visit to the clinic today**, include your main complaint(s)?

_____

_____

_____

_____

_____

_____

APPENDIX V

Confidential

PATIENT BIOGRAPHICAL INFORMATION QUESTIONNAIRE

1. PERSONAL DATA **PATIENT NO._____**

Name: _____ Age: _____ Gender: _____

Tel No.: _____ Marital Status: _____

No. of children: _____ Date of visit: _____

2. TEMPERAMENT (Please attach temp eval sheet) Dominant _____ Subdominant _____

3. MEDICAL HISTORY

Previous conditions:_____

Operations: _____

Current medication: _____

_____

4. SIGNS, SYMPTOMS AND PRESENTING COMPLAINTS

_____

_____

Patient input as to the causes/s of illness: _____

_____

5. AETIOLOGY (GOVERNING FACTORS)

Dietary
Food preference:

Meat _____Veg _____Grains _____

_____

Sweet foods _____ Sour foods _____

Daily Water Intake _____ Preferred temperature of drinks: _____

Environmental /Breathing (exposure to aircon/pollution, etc.): _____

_____

Sleep patterns: _____

Exercise: _____

Emotions: _____

Elimination
Bowel elimination: _____

Urine: _____

Menstrual cycle: _____

Other factors (occupation, etc.) _____

_____

6. CLINICAL EXAMINATION

Pulse: _____ BP: _____ B/S: _____ Cholesterol: _____

Urine: _____

Weight: _____ Iron (Haemoglobin): _____

Any other examinations/tests: _____

_____

7. DIAGNOSIS

_____

_____

Pathway: _____ Frame of illness condition: _____

8. TREATMENT

Treatment frames: _____ Medication: _____

_____

Governing factors – Diet: _____

Other: _____

_____

_____

Regimental therapies (specific): _____

_____

_____

APPENDIX VI

Confidential

PATIENT FOLLOW-UP VISIT QUESTIONNAIRE

Patient no. _____ Date of completion: _____ 200_____

Please mark your response with a X in the appropriate space. Please answer ALL the questions.

1. To what extent did you comply with the treatment the practitioner provided during your first visit?

Did not comply at all	Poor compliance	Moderate compliance	Good compliance	Excellent compliance
1	2	3	4	5

Provide reasons for your rating:

_____

_____

_____

2. In your mind, did the treatment improve your well-being?

No improvement	Minor improvement	Moderate improvement	Good improvement	Excellent improvement
1	2	3	4	5

Provide reasons for your rating:

_____

_____

_____

3. Did you use any medicine other than prescribed by the Unani-Tibb practitioner during the treatment period?

If **yes**, specify and provide reasons:

YES	NO

_____

_____

_____

APPENDIX VII

Confidential

QoL PATIENT EVALUATION QUESTIONNAIRE

Patient no. _____ **Date of completion: _____200_____**

Read the ensuring statements and/or questions regarding your quality of life carefully and mark your response with an X.

1. Rate your **current health status**:

Very Poor	Poor	Moderate	Good	Excellent
1	2	3	4	5

2. Rate your **current quality of life status**:

Very Poor	Poor	Moderate	Good	Excellent
1	2	3	4	5

3. How much of the time in the **past month** have you:

	1 Always	2 Often	3 Sometimes	4 Seldom	5 Never
Felt full of energy?					
Felt nervous					
Had problems in sleeping?					
Felt that treatment was not working?					
Felt positive about getting better?					

4. During the **past month**, to what extent has your physical health interfered with your normal social activities with family, friends, neighbours, or groups?

Always	Often	Sometimes	Seldom	Did not interfere at all
1	2	3	4	5

5. To what extend does your illness condition affect your **daily work duties** (such as efficiency or time planning)?

Always	Often	Sometimes	Seldom	Does not affect it at all
1	2	3	4	5

6. How **satisfied** are you with your current treatment regime(s) or health intervention(s)?

Exceptionally satisfied	Favourable	Satisfied	Unsatisfied	Exceptionally unsatisfied
1	2	3	4	5

7. To what extent does your illness conditions affect your self-esteem?

Always	Often	Sometimes	Seldom	Does not affect it at all
1	2	3	4	5

8. During the **past month**, to what extent has your **emotional state** interfered with your normal social activities with your family, friends, neighbours or groups?

Always	Often	Sometimes	Seldom	Did not interfere at all
1	2	3	4	5

9. To what extent does your illness condition affect your **personal life**?

Always	Often	Sometimes	Seldom	Does not affect it at all
1	2	3	4	5

10. Rate the **affordability** of your **current treatment regime(s)**.

Extremely affordable	Very affordable	Affordable	Unaffordable	Extremely unaffordable
1	2	3	4	5

11. Rate the **value for money** that you get from your **current treatment regime(s)**.

Extreme value for money	Acceptable value for money	Moderate value for money	Unacceptable value for money	No value for money
1	2	3	4	5

12. To what extent does your current treatment make you feel you can have a **positive influence on the outcome** (i.e., empowers you to influence the outcome of your health)?

To a great extent				To no extent at all
1	2	3	4	5

13. To what extent does your **current treatment** give you an understanding of, or insight into, the cause of the condition?

To a great extent				To no extent at all
1	2	3	4	5

14. To what extent does your **current treatment** give you **control over your health**?

To a great extent				To no extent at all
1	2	3	4	5

15. Would you recommend your current treatment to your family, colleagues and friends?

Yes	No	No Sure
1	2	3

APPENDIX VIII

DIPLOMA IN UNANI-TIBB

PROGRAMME EVALUATION QUESTIONNAIRE

This evaluation is to determine your perception of the programme to date with respect to the following:

1. UNDERSTANDING THE PRINCIPLES OF UNANI-TIBB

(a) Did you find the Philosophy on Tibb easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(b) Did you find the Aetiology easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(c) Did you find the Pathology & Diagnosis easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(d) Did you find the Therapeutics easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(e) Did you find the Pharmacology easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(f) Did you find the Regimental Therapies & Dietetics easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(g) Did you find the Illness Management modules (to date) easy to understand?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

2. INTEGRATION OF UNANI-TIBB INTO YOUR PRACTICE

(a) To what extent have you been able to implement Unani-Tibb into your practice up until now?

20%	30%	40%	60%	>80%

Explain briefly why you were able to achieve as much or as little of the percentage:

_____
_____
_____
_____
_____

(b) Was this implementation easy or difficult?

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(c) My patient profile allows me to make change.

VERY LITTLE	LITTLE	ENOUGH	MORE	A LOT MORE

(d) I was comfortable with the implementation.

VERY LITTLE	LITTLE	ENOUGH	MORE	A LOT MORE

(e) My employment/working conditions allowed me to make changes.

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(f) What component of the programme will be the easiest to incorporate into your practice?

(i) Governing factors (excluding diet)

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(ii) Dietotherapy

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(iii) Regimental therapies

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

(iv) Medication

VERY DIFFICULT	DIFFICULT	OKAY	EASY	VERY EASY

3. WHAT BENEFITS HAS UNANI-TIBB HAD FOR YOU AND YOUR PATIENTS

(a) How much did the programme benefit you in understanding pathological processes?

20%	40%	60%	80%	100%

(b) Did this programme provide you with more confidence to diagnose and treat conditions?

VERY LITTLE	LITTLE	ENOUGH	MORE	A LOT MORE

(c) Have you perceived any changes in your patients from incorporating Unani-Tibb into your practice?

VERY LITTLE	LITTLE	ENOUGH	MORE	A LOT MORE

(d) To what extent will you be able to integrate Unani-Tibb into your practice after you have completed the programme?

10%	30%	50%	70%	90%

APPENDIX IX

Evaluation of Unani-Tibb Diploma at completion of the programme

1. *Expectations* – How much did the Diploma programme fulfil your initial expectations?

0-20%	20-40%	40-60%	60-80%	80-100%

Comment: _____

2. *Practical benefit* – To what extent did the programme benefit you in the following:

(a) Understanding the causes of various illnesses:

Very little	Little	No change	Little more	Lot more

(b) Diagnostic skills/insights?

Very little	Little	No change	Little more	Lot more

(c) Treatment options:

Very little	Little	No change	Little more	Lot more

(d) To what extent have you integrated this programme into your practice?

0-20%	20-40%	40-60%	60-80%	80-100%

3. *Duration of sessions* – Do you consider the training day:

Too long ☐ Too short ☐ About right length ☐

Comment: _____

4. *Duration of programme* – Do you consider the total duration of the Programme:

Too long ☐ Too short ☐ About right length ☐

Comment: _____

5. *Training pace* – was the overall pace of training by the instructors:

Too long ☐ Too short ☐ About right length ☐

Comment: _____

6. *Level of instruction* – was the level of instruction by the instructors:

Too high ☐ Too low ☐ About right level ☐

Comment: _____

7. *Supplementary training notes* – Would you have liked more notes to be issued in the programme?

Yes ☐ No ☐
Comment: _____

8. *Programme materials* – are you satisfied with the overall quality of:

The modules Yes ☐ No ☐ Comment: _____

The presentations Yes ☐ No ☐ Comment: _____

The discussions Yes ☐ No ☐ Comment: _____

The evaluation exercises Yes ☐ No ☐ Comment: _____

9. *Areas for greater detail* – in which areas would you like more information or discussion?

The philosophy of Unani-Tibb ☐ Diagnostic procedures in Unani-Tibb ☐

Prevention of disorders by the practice of Unani-Tibb ☐

The treatment of acute ☐ and/or chronic ☐ ailments by Unani-Tibb ☐

Other areas (specify) ☐ _____

10. *General organization* – were you satisfied with the overall organization of the Programme?

Satisfactory ☐ Not satisfactory ☐
Comment: _____

11. *Suggest areas for improvement:*

What did you like least about the Programme? _____
_____

What did you like most about the Programme? _____
_____

12. *Recommendation* – if you were approached by a colleague, would you recommend the Programme to him or her?

If yes, why? _____

If no, why not? _____

Thank you for your cooperation!

Name:	Signed:	Date: