West African Heath Organization
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TRAINING MODULE

Introduction to Traditional Medicine

Module Title: Introduction to Traditional Medicine (Phytotherapy)
Module Code
Level
Credit
Module Leader
Pre-requisites:

Aims

Provides a coherent introduction to the study and practice of herbal medicine, in particular as found in medical herbalism within Africa. It introduces the scientific study of herbal medicine, explores the history of African Traditional Medicine, and briefly reviews other key herbal traditions.

Learning Outcomes

On completion of this module students will be able to demonstrate a knowledge and understanding of: 1. The scope of herbal medicine as it is practised around the world. 2. The history of western herbal medicine from antiquity to the present day (in particular the Anglo-American tradition of medical herbalism) and its relationship to the history of medicine as a whole. 3. The role of science and the arts in herbal medicine and the key importance of systematic study in making sense of medicinal plants. 4. Different scientific perspectives commonly adopted when investigating medicinal plants and herbal medicine in general 5. The practice of medical herbalism; what it involves and its basic theoretical concepts. 6. Basics of materia medica and details of 20 medicinal plants, including plant recognition, active constituents, actions, indications, dosage, research and methods of application as medicines 7. The process of professionalisation of complementary medicine and specific requirements for the herbal medicine profession, including the creation of a permanent legal framework. 8. Other issues of importance within herbal medicine currently and in the future. 9. Students will also be able to contextualise and locate the above knowledge within the field of herbal medicine as a whole.

Syllabus

1. Introduction to African Traditional Medicine, to the study of herbal medicine and the profession of medical herbalism; what is it, what scientific evidence is there to support its practice?
2. Herbal medicine across the world; Western Herbal Medicine; Traditional Chinese medicine; Ayurveda; other key traditions; are there universal aspects to herbal medicine? The inclusion of non-western herbal medicine. Herb identification walk.
3. History of western herbal medicine from classical times to the Renaissance; to what degree is this simply the history of western medicine; why and when does ‘herbal medicine' become distant from 'medicine'?
4. The growth of medical science and chemical medicine; rejection of herbal medicine; establishment of 'irregular' medicine - herbal medicine and homoeopathy'; eclecticism, physiomedicalism and naturopathic perspectives on health and illness.
5. Herbal medicine in the 20th century to the present day. The role of science and the arts in understanding and developing herbal medicine. Holism and reductionism. Reuniting 'medicine' and 'herbal medicine'.
6. The practice of medical herbalism: basic review of herbal practice, is it safe, what conditions does it treat most effectively? Enhancement of health as well as the treatment of disease. Basic concepts of medical herbalism.
7. Introduction to materia medica: ways of understanding medicinal plants including taste, smell and touch, the role of pharmacology, actions and indications. Dosage. Study of 20 commonly used medicinal plants. Basic formulation; simple methods of preparation and application.
8. Legislation affecting traditional medicine practice. Is integration possible? Ethical issues. Herbal medicine research.

Learning, Teaching and Assessment Strategy

A number of methods will be used during this module.

(1) Lead lectures using appropriate learning materials such as handouts, videos, slides to introduce relevant information, concepts and theories.

(2) Practical sessions including visits to a medicinal herb garden and opportunities to taste and smell herbal preparations will provide basic skills to build on in later modules.

(3) Seminar presentations prepared by students – each student will be asked to prepare and deliver a report on their selected topic.
(4) Group activities including discussions and short tasks will help develop understanding and application of ideas.
(5) Private study – further reading suggestions will provide guided opportunities for additional independent learning and for preparation of assessed coursework.

Assessment Scheme

One written assignment of 1500 words; a written seminar report paper of 1500 words of a seminar presentation. Each piece of coursework will count for 50% of the final grade. All elements of the assessment must be passed.

Learning Materials

Bartram, T. (1995) Encyclopedia of herbal medicine. Grace Publishers.
Cant, S and Sharma, U, (1999) A new medical pluralism: alternative medicine, doctors, patients and the state. UCL Press.
Chevallier, A. (1996) The Encyclopedia of Medicinal Plants, Dorling Kinderley.
Griggs, B. (1997) The New Green Pharmacy. Vermilion.
Hoffman, D. (1996) The New Holistic Herbal. Element.
Mills, S. & Bone, K. (2000). Principles and Practice of Phytotherapy
Porter, R .(ed) (1997) Medicine, a History of Healing. Michael O'Mara Books
Rogers, C. (1995) The Woman's Guide to Herbal Medicine. Hamish Hamilton.

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TRAINING MODULE

Herbal Pharmacology and Therapeutics I & II

Module Title **:** Herbal Pharmacology and Therapeutics

Module Code **:**

Level **:**

Credit **:**

Module Leader **: ……**

Pre-requisites **:**

AIMS

This module aims to ensure that healthcare professionals are conversant with the main chemical constituents present in the most common herbs, their effects on the human body, and their interactions within a formulation and with orthodox medicines. The module provides students with the knowledge to be able to critically evaluate a patient's therapeutic needs and develop an appropriate individual treatment protocol. Examples of African, Western and Asian herbs will be provided to allow students to appreciate the diversity of plants used to treat illness across the globe. The module is designed to make students aware of the multifactorial nature of illness, and the way in which herbal medicines, with their multi-component active principles and breadth of action, can best be applied to positively influence health and to relieve illness. Awareness of the therapeutic limitations of herbal treatment, of the potential for herbal medicines to produce adverse events and to interact with conventional medicines, and of the significance of a professional and systematic approach to herbal therapeutics will underpin all aspects of the module.

LEARNING OUTCOMES

After completion students will have:

- The ability to identify the molecular features of the main groups of pharmacologically active plant constituents and to understand their

mechanisms of actions, potential toxicological impact and the prospects for interactions between synthetic drugs and those plant constituents (or constituent groups);

- A knowledge of some existing herbal monographs to appreciate the degree to which the medicinal plants covered in them have been the subject of scientific investigation;

- Recognise and appreciate the relevance of scientific and empirical/traditional understanding of how medicinal plants may be applied as medicines;

- The ability to apply knowledge of the herbs in the existing pharmacopoeias to produce appropriate standard prescriptions;

- A detailed understanding of the role of herbal medicine in the prevention of illness and the ability to produce an accurate and concise list of aetiological factors responsible for the development of functional or pathological illness in a patient;

- The necessary intellectual, analytical and intuitive skills to be able to make an appropriate selection of medicinal plants to treat such disorders, and to develop a treatment plan based on the needs of the patient as a whole including consideration of diet and exercise, as well as social, emotional and spiritual factors;

- Symptomatic treatment, 'drainage' of the organs of elimination, and at a deeper level: psychological and physiological support for stress and the stress response, and treatment of imbalances within the autonomic nervous system, immune system and endocrine system;

- The ability to produce a simple individually-tailored prescription for a given patient, demonstrating the facility to apply therapeutic principles in practice;

- A comprehensive understanding of the therapeutic principles involved in the management and treatment of disorders of the male and female reproductive systems, nervous system and of the skin;

- The knowledge and ability to adjust treatment and prescribe appropriately for acute and chronic problems, as well as for different age and gender groups, e.g. infants and children, pregnant and lactating women, and the elderly –

- The ability to make a prognostic evaluation of the outcome of the treatment with herbal medicine and identify clinical contraindications to treatment;

- A good understanding of the need for promotion of self-healing within the patient and as part of the therapeutic relationship, the ability to utilise this awareness on the patient's behalf;

- Be able to carry out information searches and evaluate current information on pharmaceutical practices, plant biochemistry and phytopharmacognosy.

SYLLABUS

PART I:

(Duration: 4 hours)

A. Major secondary plant metabolites:

A.1. the phenolics – simple phenols, flavnoids, coumarins, athraquinone glycosides, tannins and other polyphenols;

A.2. the isoprenoids-monoterpenes, sesquiterpenes, triterpenoid and steroidal saponins, cardioactive glycosides;

A.3. alkaloids, chemically ill-defined constituents and groups (gums and mucilages, resins, bitter principles, acrid principles, eliminatives); primary metabolites (carbohydrates, mineral complexes, vitamins, other nutrients);

B. Assessing the impact of constituent pharmacology on herbal therapeutics: generating testable hypotheses in clinical practice- interactions between plant constituents and synthetic drugs; toxicology of plant constituents.

C. Materia medica of the digestive system:

C.1. treatment of digestive disorders: dyspepsia, gastric reflux, peptic ulcer,hepatitis, . biliary disorders, diarrhoea, constipation, inflammatory bowel disease, irritable bowel.

C.2. (Duration: 2 hours)
Materia medica of the cardiovascular system. : treatment and prevention of cardiovascular disorders: arteriosclerosis, mild heart failure, hypertension, hyperlipidaemia, venous insufficiency etc...

C.3. (Duration: 2 hours)
Materia medica of the musculoskeletal system: treatment of musculoskeletal disorders: osteo- and rheumatoid arthritis, fibrositis, sciatica, gout, tendinitis etc

C.4. (Duration: 2 hours)
Materia medica of the respiratory system: treatment of respiratory disorders: rhinitis, asthma, sinusitis, otitis, tonsillitis, bronchitis, influenza etc

C.5. (Duration: 2hours)
Materia medica of the urinary system: the kidney as an organ of elimination. Treatment of urinary tract disorders: cystitis, urethritis,prostatitis, lithiasis etc. Conclusion and revision.

PART II

A. (Duration: 2 hours)
Materia medica of the nervous system. Treatment of nervous system disorders: anxiety, depression, stress-related disorders, insomnia, phobias,addiction, etc. The role of stress.

B. (Duration: 2 hours)
Materia medica of the skin: treatment of dermatological disorders: eczema, psoriasis, acne vulgaris and rosacea, herpes simplex and zoster, furunculosis, urticaria, fungal infections,etc.

C. (Duration: 2 hours)

Materia medica of sexual function in women and men: treatment of gynaecological disorders: amenorrhoea, dysmenorrhoea, menorrhagia, irregular menstrual cycles, infertility, premenstrual syndrome, menopausal problems,vaginitis, etc, herbal medicine during pregnancy, for childbirth and during lactation. Treatment of disorders related to male sexual function: benign prostatic hypertrophy, impotence, etc.

D. (Duration: 2 hours)
Materia medica of metabolic and endocrine disorders: treatment of hypo/hyperthroidism; diabetes and its complications.

E. (Duration: 2 hours)
Treatment of children and appropriate herbal medicines; treatment of the elderly and patients presenting with multiple pathologies.

LEARNING, TEACHING

A variety of methods will be used during this module:

- Lead lectures to introduce relevant information, concepts and theories.

- Practical sessions including visits to a medicinal herb garden and identification of herbal preparations.

- Seminar presentations prepared by students – students will be asked to prepare and deliver a report on specific conditions or case studies in small groups.
- Group activities including discussions and short tasks will help develop understanding and application of ideas.

- Private study – further reading suggestions will provide guided opportunites for additional independent learning and for preparation of assessed coursework.

ASSESSMENT STRATEGY

- 2 hour unseen written paper (50%); 2,000 word written report (50%).

- Seen written examination paper to be completed over two weeks involving assessment and treatment of two case histories – total of 3000 words(50%).

- A review of approx. 2,000 words on herbal approaches to the treatment of a specific condition (50%). All elements of the assessment must be passed.

LEARNING MATERIALS

West African Herbal Pharmacopoeia (2013).

Martindale (1972) The extra pharmacopoeia (26th ed) Pharmaceutical Press.

Mills, S & Bone, K (1999) Principles and Practice of Phytotherapy, Churchill Livingstone.

Evans W (ed) (1989) Trease and Evans: Pharmacognosy (13th ed) BailliereTindall.

Pengelly A (1996) The Constituents of Medicinal Plants: An Introduction to the Chemistry & Therapeutics of Herbal Medicines, Sunflower Herbals.

The British National Formulary (current) published by the British Medical Association and Royal Pharmaceutical Society.

Bradley, P. (ed.) (1992) British Herbal Compendium. Volume I, British Herbal Medicine Association.

Spinella, M. (2001) The Psychopharmacology of Herbal Medicine. MIT Press.

Nigerian Herbal Pharmacopoeia (2008).

Ghana Herbal Pharmacopoeia (1995, 2007).

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TRAINING MODULE

Herbal Pharmacy

Module Title : **Herbal Pharmacy**

Module Code :

Level :

Credit :

Module Leader : **…..**

Pre-requisites :

AIMS

Herbal Pharmacy is the preparation and dispensing of herbal medicines to manage or treat diseases. The production and dispensing/supply of herbal medicines require knowledge and skills in pharmacy, grounded on a good knowledge of the phytopharmacology and quality control procedures. This module therefore aims to provide a Pharmacy dispensing course tailored principally to the needs of the healthcare professional in a dispensing practice. It is also of relevance to the commercial maufacture of herbal medicines, and addresses regulatory issues regarding the use of herbal medicines. It considers the range of factors that affect herbal medicine formulation, including therapeutic actions, compatibility/incompatibility, storage, stability and herb/drug interactions. Overall students will acquire skills sufficient to ensure that they are able to store, handle, produce and dispense herbal medicines safely and hygienically.

LEARNING OUTCOMES

After completion of the module the student will:

- Have a comprehensive knowledge and understanding of the scientific principles of pharmaceutical formulation and the links with phytopharmacology and of materia medica and therapeutics;

- Be able to relate theory to practice by demonstrating the ability to formulate medicines relevant to herbal practice, whether prescribed

orally or topically; implementing good dispensing techniques, hygiene, safety and economics in dispensing;

- Be able to demonstrate a good understanding of the different processes involved in the manufacture of herbal medicines, critically evaluate the relative merits of different processes in terms of finished medicinal products and have a comprehensive knowledge and understanding of the centrality of quality control in herbal pharmaceutical practice;

- Have the knowledge and understanding needed to discuss the regulatory status of herbal medicines, and the legal requirements affecting the medical herbalist;

- Be able to carry out information searches and evaluate current informations on pharmaceutical practices and herbal pharmacy.

SYLLABUS

A. A brief review of the history of pharmaceutical science; reference books available; an appraisal of literature available and how to access; discussion of the role of pharmacy in herbal medicine, and of pharmaceutical knowledge in the formulation of herbal medicines.

B. Basic skills; reliability, accuracy and safety of dispensing; use of equipment.

C. Weighing, measuring liquids, units etc; containers and labelling; reference books.

D. Herbal medicine formulation and production; the science of formulation; production of tinctures, glycerol extracts, fluid extracts, aqueous extracts.

E. Tisanes, maceration etc; basic equipment needed in the dispensary; visit to a herbal manufacturing plant and herb importer.

F. Dispensing of internal and external products: explanation of emulsions and emulsifying agents; production and uses of creams, ointments, lotions and suspensions; tablet and capsule preparation, mixtures, linctuses, syrups, lozenges, suspensions; miscellaneous products.

G. Internal and external; inhalations, gargles/mouth washes, insufflations, liniments, suppositories/pessaries, irrigation/douches, plasters, poultices;distillation of essential oils- aseptic techniques, preservation, stability and sterilisation of medicines; production of eye drops and lotions, nasal drops, ear drops; cautions to be exercised with these products; quality control in herbal practice: within the dispensary and accessing laboratory services.

H. Regulations in the ECOWAS member states concerning the dispensing of medicines, particularly herbal preparations.

LEARNING, TEACHING AND ASSESSMENT STRATEGY

- Lectures.
- Lab work.
- Seminars and work to be carried out at home. Students will be closely supervised and tutorials used to strengthen any weak areas.
- Course notes.

ASSESSMENT SCHEME

-1 x 1,500 words written report (25%);
- Unseen multiple choice/short answer/question paper (50%);
- Practical lab work assessment (25%).

LEARNING MATERIALS

Florence A & Attwood D (1994) Physiochemical Principles of Pharmacy (2nd ed) Macmillan.

Mills SY (1991) The Essential Book of Herbal Medicine, Penguin, UK.

Mills S & Bones K (1999) Principles and Practice of Phytotherapy: Modern Herbal Medicine, Churchill Livingstone.

The British National Formulary (current) published by the British Medical Association and Royal Pharmaceutical Society.

Mukherjee P.K (2002). Quality Control of Herbal Products. Business Horizons Pharmaceutical Publishers, India

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TRAINING MODULE

HERBAL RESEARCH

Module Title : **Herbal Research**

Module Code :

Course Duration :

Module Leader : Biostatistician, Clinical Epidemiologist, Phytochemist, Pharmacognocist, Pharmacologist

Pre-requisites : Health care professionals

AIMS

This course aims to provide students with the relevant information needed to integrate herbal medicine into their practice. The course is designed to develop trained human resources with enough knowledge of Herbal Sciences for quality formulations for the fast growing Herbal Industry. This course provides potential source of knowledge for biodynamic compounds useful in providing effective health care to the poor world. In addition the module aims to equip students with knowledge in the use of modern technologies to formulate and to understand issues of conservation and genetic resources. It is hoped that by understanding herbal research, students will be able to contribute meaningfully to improving the quality of herbal medicines consumed by the public.

LEARNING OUTCOMES

After completion of the module the student should be able to:

- Describe the nature of herbal research and appreciate the contribution it can make towards solving priority health problems within the local context;

- Review literature and other available information on herbal research;

- Formulate research hypothesis and develop appropriate research methodology;

- Analyze and interpret herbal research results and present a final report that includes recommendations for implementation of research findings;

- Appreciate the problems associated with herbal research;

- List the various stages in the production of herbal medicines;

- Describe the methods for controlling the quality of the raw materials used to produce herbal medicines;

- Indicate 5 methods for protecting Intellectual Property Rights and traditional medical knowledge.

SYLLABUS

A. Identification of the various types of research design - primary and secondary research. Distinguishing between three main areas: basic medical research, clinical research, and epidemiological research.

B. Importance of ethics in research.

C. Understanding of the various classifications of study types, depending on what research strategies are used:

- non-interventional studies in which the researcher describes and analyses researchable objects or situations but does not intervene. These include: exploratory research, descriptive research and comparative or analytical studies;
- interventional studies in which the researcher manipulates objects or situations and measures the outcome. This includes: experimental studies and quasi-experimental studies.

D. Preparation of herbaria.

E. Evaluation of ethnomedical evidence.

F. Toxicity testing and tests of biological activity (in vivo and in vitro)

G. Identification of chemical markers (flavonoids, alkaloids, cardiac glycosides, coumarins, tannins, etc.)

H. Quality control of raw of raw materials and finished products (levels of foreign matter, ash values, total chlorides, pesticide residues, heavy metals, microbial levels, etc.)

I. Understanding clinical trials in herbal medicine.

J. Understanding methods for protecting intellectual property rights, traditional medical knowledge and technological innovations and inventions in the drug industry (patents, trademarks, trade names, *suis generis*, commercial secrets, etc.)

K. Development of technical documents for obtaining marketing authorization.

L. Understanding methods for ensuring sustainable supply of raw materials.

LEARNING, TEACHING AND ASSESSMENT STRATEGY

- Lectures,
- Seminars and fieldwork to be carried out in the community,
- Group work,
- Questions and answer sessions,
- Practical work.

ASSESSMENT SCHEME

- Students shall undertake a project work and submit a 3.500 word report,
- Written report (50%),
- Assignment (20%),

- Unseen multiple choice/short answer question paper (30%).

LEARNING MATERIAL/READING LIST

The Importance of Clinical Trials in the Development of New Medicines.

Moses H, Dorsey E, Matheson D, Thier S (2005). Financial anatomy of Biomedical Research. JAMA 294 (11): 1333–42

NHMRC Annual Report 2008-09, 2009/
nhmrc.gov.au/publications/synopses/nh126syn.htm.

Indrayan A (2004). Elements of medical research. Indian J Med Res 119 (3): 93–100.

Highleyman L (2006). A guide to clinical trials. Part II: interpreting medical research. BETA 18 (2): 41–7.

WHO (2000). General Methodological principles for research and evaluation on traditional medicine 87p.

Bruneton J (1993). Pharmacognosy, Phytochemistry, Medicinal Plants, 2nd edition tec, paris; 915 p.