CONSTRAINTS FACING THE DEVELOPMENT OF LOCAL HERBAL BASED PRODUCTS BUSINESS IN KENYA

BY

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DECLARATION

This research paper is my original work and has not been presented for a degree in any other university.

----------DATE: 06/08/03

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This research paper has been submitted for examination with my approval as University supervisor.

----------DATE: 15/08/03

MR. T.R. WAMBUA

DEDICATION

This research project is dedicated to my wife Naomi and my children Steve, Maggie, Zippy and Andrew.

AND

To all the humble seekers after the truth and to the hope that knowledge of herbal medicine will one day provide a solution to all health problems plaguing man.

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DEFINITION OF TERMS AND ABBREVIATIONS

Herbal medicine

This is medicine derived from plants. Herbs are low growing, soft stemmed plants, which die out at the end of the growing season. The leaves, roots, seeds and stems are used in medicine. Herbal medicine however in context of the whole of this study will refer to medicine of plant origin including trees and shrubs and drugs of mineral origin. Herbalist refers to the practitioner of herbal medicine and the terms are interchangeably used.

Formulation

This is an exact composition of what will be in the herbal preparation in terms of the active ingredients and the inactive ingredients.

Standardisation

This is the process of ensuring that all preparations of the same herb made at the same time or at different times in the same place or different places by the same manufacturer or different manufacturers adhere to the same quality and contents and the results are reproducible

Drug delivery systems

These are the various vehicles or dosage forms that deliver drugs into the body e.g., injections, capsules, tablets, syrups, ointments, creams, nasal drops, inhalations etc.

Herbal extracts

These are products, which have been removed or extracted from herbs in form of oils, juices, latex, alkaloids etc by pressing, boiling, crushing or leaching a herb.

Ethnomedicine

Traditional medicine in this study focuses on African traditional medicine with a particular interest in herbalism.

Biomedicine

This refers to conventional modern medicine.

ABBREVIATIONS

HIV-Human immuno virus

AIDS – Acquired immuno deficiency syndrome

WHO – world health organisation

ADB- African Development Bank

UNIDO-United Nations Industrial Development Organisation

UNEP-United Nations Environmental Program

GNLD-Golden Neolife Diamite

NWM-Network Marketing

UNICEF-United Nations International Children's Emergency Fund

ABSTRACT

The field of herbal medicine has recently experienced a revival of interest and it is generally thought that herbs will be extremely profitable to man in terms of solutions to health problems afflicting humankind. Herbs are no longer consigned to realms of quackery but are widely recognised as useful aids to a healthier life.

The current costs of conventional medicine in Kenya and the declining purchasing power of the citizens dictates the urgency and importance of finding cheap, effective and affordable drugs and hence the need for this research project. This survey sought to determine why local herbal products have not developed to a level where the same can be incorporated into modern healthcare system and at the same time compete with imported herbal products like those from Asia, South Africa China, etc. The survey sought answers from consumers, herbalists and pharmaceutical manufacturers in semi structured questionnaires designed to capture the necessary information.

The research paper revealed that consumers trust the efficacy and safety on usage of local herbal products. They felt that the medicine was affordable but the quality, pleasantness and the hygiene aspects under which the products were prepared were wanting. Both the pharmaceutical manufacturers and the herbalists were in consensus that formulation into modern dosage forms would put these products on the same platform with conventional medicine. They also felt that herbal based products will have a great contribution to disease treatment in Kenya. However, the major constraint to the development of herbal products business in Kenya lay in the expensive infrastructure required, technology, raw material availability and marketing infrastructure, otherwise the future of these products remains very bright.

CHAPTER 1 - INTRODUCTION

Background of the study.

Herbal based products in Kenya have been utilized for very many years. Before the advent of modern medicine and the establishment of the associated infrastructure of Pharmaceutical manufacturing firms, hospitals, dispensaries and clinics, herbal preparations were the only therapeutic remedies available to combat the various ailments that afflicted the human race.

Various different communities in Kenya had their medicine men, the experts who knew the various herbs to treat various diseases. These medicine men were highly respected and were held in awe. The herbal remedies were and still are available in various dosage forms, which include whole plants, ground leaves, stem or root, tinctures and liquid extracts from herbs.

Standardisation and formulation of these herbal remedies into modern dosage forms like tablets, capsules, injections, entubed ointments and creams etc. has however remained elusive despite the fact that modern pharmaceutical firms with modern technology and the relevant skills are well established in the Country's Pharmaceutical manufacturing industry.

Herbal based products in countries like India, China and Japan are widely manufactured and used and their knowledge as well as use dates back several centuries.

In some instances, herbal based products have been found to be effective in some

conditions or diseases that do not have any treatment from the conventional medicine.

They have also been found to be cheap, easily available and less toxic than the modern medicine. New knowledge has also come in that has given amazing reports as to the efficacy and hitherto unknown indications of several herbal extracts, making the future in this field really promising, with the potential of using current technology to research on new herbal products.

The countries mentioned above including South Africa, Malaysia and other Far East countries have managed to manufacture, standardise and attractively package their herbal products in a way that is characteristically unique. This way they have been able to put herbal drugs on the same product platform with other drugs. As a result, they have claimed a huge market share in both over the counter products and prescription medicine.

These products are now able to run side by side with conventional medicine.

Due to their attractive presentation, and the standardised dosage forms, consumer attitude towards these products has been changing rapidly resulting in rapid growth in their market share in Kenya.

Swissgarde and Golden Neolife Diamite (GNLD) are two South Africa companies dealing with herbal based products which have managed to establish an innovative marketing strategy which has been very successful. They have kept off the conventional channels of distribution through wholesale and retail shops and have formed a thorough network of selling from door to door with a very wide consumer base with a guarantee of repeat purchases. These products are sold as

food supplements and have therefore escaped the stringent requirements for registration in Kenya by the Pharmacy and Poisons Board. The international companies trading in these products have managed to erect barriers to new entrants into the industry by employing economies of scale. The formulation, quality control, and production of these products into various dosage forms requires specialised machinery whose cost is prohibitive for new entrants. The Kenya Government in its Sixth National Development plan stated that: - "Although for a long time the role of traditional medicine and it's potential contribution to health has been viewed with skepticism, a large proportion of people in Kenya still depend on it for cure. During the plan period, the Government will encourage the formation of professional associations for traditional medicine practitioners. Such associations will facilitate the gathering of necessary information for the use, development and appropriate adaptation of traditional diagnostic, therapeutic and rehabilitative control technologies that will become part and parcel of formal medicine research" (p 224).

The Kenya National Drug Policy Plan of operation 1996-2000 stated that: - "Traditional medicine, which is an essential part of the Nations Cultures, will need to be harmonised with the regular health care system to create a symbiotic environment. A technical evaluation committee will be established, which will "inter-alia" develop registration criteria for practitioners and products. A baseline

survey on the use of traditional medicine, combined with relevant experience in other countries and specific studies on the cultivation, toxicity and efficacy of medicinal plants will be used to develop a National Herbal Pharmacopoeia and monographs on selected plants."

A bill incorporating herbal medicine into formal healthcare system will be tabled in parliament very soon for policy guidelines and establishment of legal framework.

Key medics from pharmacology and drug research companies are arguing that Africa requires an Afrocentric solution to its therapeutic drug needs. According to a UK based Professor David Horrobin former Professor of Medical Physiology University of Nairobi in a recent interview said: "For the most part, drugs are developed for Africa only when Africans suffer the same diseases as people from the industrialised countries.

Thus those diseases that commonly afflict Africans but are rare in the industrialised world are not subjects of major research."

Traditional medicine and in particular use of herbal products is deeply rooted in people's culture. In Africa and in particular Kenya, the colonial powers had downgraded traditional medicine to the level of a nuisance cultural practice. Religion brought in by the colonialists didn't make this situation any better but outrightly demonised the practice associating it with witchcraft.

There are basically 3 broad categories of consumers of herbal products in Kenya,

i) A large percentage of the population do not have ready access to modern medicine and rely almost wholly on the herbal products prepared by their local medicine men. To them it is not an alternative to any other medicinal products or medical system.

ii) Some people who are disillusioned with Western (orthodox) medicine or biomedicine go for the herbal products as a form of protest. In this category are people suffering from chronic diseases such as asthma, diabetes, epilepsy, HIV/AID etc. They are bitter and frustrated after paying so much money to specialists who appear to have no answer to their problems.

iii) Significant groups of the population practice a parallel consumption of both the conventional medicine and the herbal based products. Some believe in synergism of the two different lines while others do so for economic reasons. Conventional medicinal products are deemed to be more expensive while herbal medicine is considered to be cheap.

Consumption habits of the local herbal products, which are part of the behavior patterns of individuals, are deeply affected by the prevailing culture of the society in which people live. Cultural norms of one group of people in different geographical zones affect their consumption patterns of these herbal remedies, based on beliefs and attitudes.

A person's beliefs are not his attitude, but his attitude is based on his beliefs' (Fishbein, 1975). If a person's beliefs are known, then it becomes feasible to tell what his attitudes are. Some highly religious people find it difficult to engage in consumption of herbal medicine due to the indoctrination in their local churches

and the belief of demonic involvement in herbal medicine. Other potential consumers believe that because of the low prices charged for the local herbal products, their quality is low. It is valuable to know both what a person thinks about something in terms of a given characteristic and also how favourably he views that characteristic. Some consumers of locally prepared herbal based products especially the urban elite frown on the packaging of the same and unfavourably view the products as unhygienic and of poor quality and possibly poisonous due to their unattractive appearance and lack of appeal.

The social normative beliefs, i.e. what the influence of consumption of local herbal products may exercise on specific behaviour and other people's opinion as perceived by an individual affect one's attitude. If opinion leaders in society or people who we admire or aspire to be consume the local herbal products, then we do likewise. This has been happening by the word of mouth spreading as pertaining to who goes where for the products and others doing likewise.

Satisfactory performance of some of the local herbal products from "recommended" sources has give rise to repeat purchases for certain specific conditions. Favourable attitudes towards the products and the source are strengthened. Dissonance is what is experienced when the contrary to the afore mentioned happens.

1.2 Statement of the problem

On the basis of the above background, the problem can be stated as:

Locally manufactured herbal based products business has not developed in Kenya and is still at its rudimentary stage.

1.3 Purpose Statement

The purpose of the study is to determine the constraints hindering the development of local herbal based products in Kenya.

Having discussed the usefulness of the herbal based products, and Kenya being richly endowed with this resource which grows naturally throughout the country, why then are these products not developed by pharmaceutical firms and knowledgeable individuals to compete with similar products from other countries?

It will be a worthwhile effort to undertake this study to determine the constraints hindering the development of herbal based products firms in Kenya, highlight and possibly offer solutions or avenues to circumvent these obstacles.

1.4 Objectives of the study

The objectives of the study are:-

i) To establish the attitudes of consumers towards local herbal based products

ii) To determine the constraints facing the marketing of local herbal based products.

iii) To determine the cost involved in establishing a herbal based products processing plant in Kenya.

1.5 Hypotheses

The suggested hypotheses are: -

i) Negative consumer attitude on local herbal based products has affected the development of the local herbal based products business in Kenya.

herbs will be extremely profitable to man and the herbal practices of our ancestors are being increasingly vindicated (Stuart M., 1989).

With the current high costs of conventional medicine in Kenya and the decreasing purchasing power of the citizens, the urgency and importance of finding cheap, effective and affordable drugs is now much more that ever before. These drugs should be effective in combating emerging and existing diseases. Other diseases are re-emerging with unprecedented virulence and will require new drugs or combination of drugs to fight them. The emergence of Human Immuno Virus (H.I.V) and Acquired Immunodeficiency Syndrome (A.I.D.S) with no cure currently available seeks for concerted effort to look for a cure from both the conventional medicine and the traditional medicine.

The recent Government proposal of introducing herbal medicine to reinforce the current conventional medicine practiced in hospitals in Kenya can only work if safe and standardised herbal preparations are used. Kenya and Africa as a whole will need own solutions to its drug policy to counteract the high production costs and unjustifiable high profit considerations of the multinational pharmaceutical firms.

It is against this background that this research gets its significance in pursuit of development of safe, cost-effective and affordable herbal medicine formulated and packaged into modern, convenient and stable dosage forms whilst still maintaining their efficacy. These newly developed herbal medicines formulated and packaged as described will be of utmost use to patients and will alleviate their

suffering. They will also be used to combat and control emerging and existing diseases.

New knowledge of development and presentation of herbal medicine will be added to the accumulated bank of existing knowledge and will be a step ahead for a future researcher to come and step on higher realms of knowledge beyond the horizon.

The study also takes cognisance and responds to the World Health Organisation's proceedings of the seventh meeting on 31st August 2000 under the banner; promoting the role of traditional medicine in Health systems: A strategy for the Africa Region (AFR/RCSO/R3). The Regional Committee recalled the World Health Assembly resolutions WHA 30.49, WHA 31.33, WHA 41.19, WHA 42.43, WHA 44.33 AND WHA 44.34 on the potential medical and economic value of medicinal plants, health human resources development and research on traditional medicine.

Other World Health assembly Regional committee resolutions are AFR/RC36/RP, AFR.R34/R8, AFR/RC40/R8 and AFR/RC49/R5 on the use of traditional medicines and development of the traditional medicine system and its role in health systems in Africa and research on medicinal plants.

CHAPTER II – LITERATURE REVIEW

The literature review covers three main areas that make up this study:

i) The review of utilization of local herbal products which will form a basis for the study of attitudes on their utilization.

ii) Examination of WHO, Government policy and legal aspects of traditional medicine practice of which herbal products fall in, including criminal and civil liability and protection under the law.

iii) Marketing of local herbal based products by the traditional medicine practitioners in comparison with other imported herbal based products available in Kenya.

2.1 Utilisation of herbal based products

Throughout the review and indeed in the whole study, herbal medicine and the herbalist will be more highlighted in the traditional medicine practise while largely ignoring other disciplines in traditional medicine like traditional surgeons, witchdoctors and traditional birth attendants.

Therefore any reference to traditional medicine will in effect be referring to herbal medicine for the purpose of this study.

Herbal based products or herbal medicine is a section in traditional medicine or ethnomedicine. Traditional African medicine may be defined as the "totality of all knowledge and practices, whether explicable or not, used in diagnosing,

preventing or eliminating a physical, mental or social disequilibrium and which rely exclusively on past experience and observation handed down from generation to generation, verbally or in writing (Ampofo and Johnson – Ronauld, 1978:38-39). The World Health Organisation (WHO) estimates that 80% of the population living in rural areas in developing countries depend on traditional medicine for their health care needs (Bannerman et. al, 1983). This strategy promotes the integration into health systems of traditional medicine practises and medicines for which evidence on safety, efficacy and quality is available and the generation of such evidence when it is lacking. In this context "integration" means increase of health care coverage through collaboration, communication, harmonisation and partnership-building between conventional and traditional systems of medicine, while ensuring intellectual property rights are not violated and protection of indigenous knowledge is done.

Kenya's modern health facilities are spatially inequitable and favour urban areas where only about 15 percent of the country's 30 million population lives. Some 57% of the households in Kenya must travel more than 4 kilometres to the nearest health facility (Bennet and Maneno, 1986).

Even where health facilities exist, medical service is not always available. Many facilities suffer from inadequate personnel, shortage of drugs, transport problems, lack of water, delays in repairs and even lack of stationery. Other problems include financial constraints to expand the services, low community participation, physical inaccessibility and remoteness (especially in the semi-arid and arid areas of the country), congestion (frequently there is more than 100% bed occupancy)

and the high cost of curative care. The inability to reach modern health facilities is a major reason as to why most rural Kenyans look up to traditional medicine for the treatment of various ailments (Good, 1987; Good and Kimani, 1980).

However, this physical and economic inaccessibility of modern medicine explains only a part of the Kenyans behaviour in seeking treatment in traditional medicine. The evidence is unmitigated that Kenyans, just like people in other African countries, may not seek Western medicine even when this is accessible owing to social psychological or cultural reasons(Mayer, 1982; Nchinda, 11976; Katz and Kimani, 1982; Good and Kimani, 1980; Pillsbury, 1979).

In certain instances, people utilize both traditional and modern medicine simultaneously. Kenyans seek therapy from a variety of sources. Research conducted found out that 17 percent of 2.6 million people who sought non-licensed, non-institutional treatment in traditional medicine obtained it from traditional healers. The figure may be much larger as people are unwilling to admit openly that they consult with traditional healers.

Most previous studies concerned with traditional medicine in Africa linked it with beliefs, religion and ritual (Yoder, 1982). Such studies pioneered by Evans-Pritchard (1937), uncritically observed that African disease aetiologies were basically moral and social (Yoder, 1982) - this scholarship followed the structural functionalist school of British anthropology. Part of the misunderstanding regarding the role of the African traditional healers emanates from colonial times, which is responsible for the negative approach to African traditional medicine.

This includes the view that all healers are witch-hunters practicing "black magic" (Thairu, 1975)

Dissatisfaction with biomedicine or modern medicine has led people, even in developed countries, to seek alternative therapies (Christie and Sandberg, 1989).

Trends in the use of traditional and complimentary medicine are on the increase in developing and developed countries. In Australia in 1998, about 60% of the population used complimentary medicine, 17000 herbal products had already been registered and a total of US. $ 650 million was spent on complimentary medicine practices. In Malaysia, it is estimated that about US. $ 500 million is spent every year on traditional medicine, compared to only US. $ 300 million on modern medicine.

Herbal medicine market has expanded tremendously in the last 15 years and the total annual sale of herbal medicines is still growing. In 1996, the total annual sale of herbal medicines reached US. $ 14 billion worldwide. In China, traditional medicine account for 30-50% of total medicine consumption (WHO, 1998).

Medical pluralism is the existence in a single society of differently designed and conceived medical systems (Janzen, 1978: xviii). Such systems exist together and may compete with one another (Fabrega, 1982: 241-242). The significance of medical pluralism is in the understanding of the provision of health care within a given society. This is especially so in the area of decision making with regard to seeking and selecting therapy.

Africans frequently utilise both traditional and modern medicine simultaneously for the same episode of illness or at different times for different illnesses

(Alexander, 1985). People go to biomedical facilities when they believe that an illness is naturalistic. This is particularly so for various children's diseases. On the other hand, people will turn to traditional healers when they conceive an illness to be caused by human induced forces. Whatever the case Africans are quite flexible in seeking treatment. Ampofo and Johnson-Romauld (1978:51) state it in the following way: "The African peoples believe in traditional medicine and it is not uncommon to see patients in hospitals permitting themselves to be treated by modern medicine during the day and having recourse to the recipes of traditional medicine at night. Such behaviour is probably motivated by a desire to maximise chances of regaining health especially in view of conflicting symptoms of naturalistic and human induced illness. The various medical systems may compete with one another (Fabrega, 1982: 241-242); nevertheless, people see and utilise them in a complementary or even supplementary way.

2.2 World Health Organisation, Kenya Government policy and legal aspects of traditional Medicine.

The Alma-Ata Declaration of 1978, the relevant recommendations of WHO governing bodies and the orientations of the Regional Health – for –All Policy for the 21st Century underscore the importance of traditional medicine and its practitioners in primary health care. They also address the strategic options that are expected to help achieve health for all. Other partner agencies of the United Nations like the United Nations Environmental Program (UNEP) and United Nations Industrial Development Organisation (UNIDO),Organisation of Africa

Unity like the African Development Bank (ADB) have also been stressing the importance of traditional medicine.

Despite these policy orientations, few countries have developed national policies, legal frameworks and codes of conduct for the practice of traditional medicine. Several countries have created associations of traditional medicine practitioners and developed programmes for the training and continuing education of traditional practitioners and for its inclusion in the health sciences.

The situation of traditional medicine remains weak in some member states of the World Health organisation. Major weaknesses include inadequate policies and legal frameworks, insufficient evidence on safety and efficacy, lack of knowledge of attitudes, practices and behaviours in traditional medicine, lack of co-ordination among institutions, inadequate documentation and lack of protection of intellectual property rights and of endangered medicinal plants species e.g. mass destruction, inadequate protection of endangered medicinal plant species and bad harvesting practices. To address these weaknesses, there is need to strengthen and develop traditional medicine and integrate it into the national health systems of WHO Member States and to protect the genetic rights of the indigenous locale where the materials come from.

The 49th session of the Regional Committee for Africa requested the World Health Organisation to develop a comprehensive strategy on traditional medicine and by its resolution AFR/RC49/RS,(2001) requested the Regional Director to support countries in carrying out research on medicinal plants and promoting their

use in the health care delivery systems. (AFR/RC 49/RS: Essential Drugs in the WHO Africa Region: Situation and Trend analysis, 2001)

The aim of this comprehensive Regional Strategy is to contribute to the achievement of health for all in the Region by optimising the use of traditional medicine with the following objectives: -

i) To develop a framework for integration of the positive aspects of traditional medicine into health systems and services.

ii) To establish mechanisms for the protection of cultural and intellectual property rights.

iii) To develop viable local industries to improve access to traditional medicines.

iv) To strengthen national capacity to mobilize stakeholders to formulate and implement relevant policies.

v) To promote the cultivation and maintenance of medicinal plants.

The WHO regional office for Africa in its paper AFR/RC50/9, (2001) stated the following: -

i) WHO will develop guidelines and organise regional and inter-country workshops to stimulate the development of national policies on traditional medicine.

ii) WHO will also advise the countries on relevant legislation for the practice of traditional medicine.

iii) WHO will promote the acquisation of knowledge and skills by facilitating the exchange of experiences and supporting the development of training programs and training materials.

iv) WHO will identify and strengthen institutions carrying out research on traditional medicine in capacity building. WHO collaborating centres will be strengthened to carry out research and disseminate the results. Medicinal plants research that could promote self reliance and reduce costs will be supported as will the documentaries of inventories of effective traditional medicine practices and the development of national formularies on traditional medicines.

v) At the country level, mechanisms for developing and improving the local productions of traditional medicines should be put in place. Such mechanisms should include encouraging local industry to invest in the cultivation of medicinal plants; exchanging information about ongoing research; and learning from experiences existing outside the Region. Governments should play the key role of creating an enabling political, economic and regulatory environment for local production. Access to traditional pharmaceutical products should be improved. A list of traditional medicines could be agreed upon and mechanisms worked out towards introducing medicines with evidence-based efficacy and safety in the essential drugs list. Large-scale cultivation and conservation of medicinal plants should be carried out with the involvement of traditional medicine practitioners and communities.

vi) WHO will undertake advocacy and encourage the countries to develop local production and include medicines with proven safety and efficacy into their national essential drug lists. The natural resources, agriculture and industry sectors will have an important role to play in the conservation of medicinal plants and the local production of traditional medicines.

Communities, non-governmental organisations and other partners will have major roles to play in optimizing the use of traditional medicine in Member States. Several international partners are particularly well placed to facilitate specific aspects of the implementation of the regional strategy. These partners include the ADB, UNEP and UNIDO in matters related to the conservation of medicinal plants and the development of local production.

vii) WHO will collaborate with the countries in monitoring and evaluating the implementation of the strategy for the Africa Region.

The legal standing of traditional medicine in Kenya is not quite clear. On the one hand are the policy statements that support and encourage development and use of traditional medicine and on the other is the lack of a specific statutory provision on the same. A Traditional Health-care Practioners Bill 2002 has been drafted and will be tabled in Parliament very soon. The Bill requires a herbalist to submit a list of plants, plant materials and medicines of mineral origin which he uses. The herbalist should also state his source for the plants or minerals. The Bill also confines the herbalist to one area, as they will not relocate to a new district before approval by the registrar. Preparation procedures of the medicine will need to be documented together with the presentation of dosage forms stating the stability, indication of the medicine, describing the safety profile and contra-indications.

Currently traditional medicine practitioners in several parts of Kenya complain of harassment by administrative personnel because the latter claim that traditional medicine is illegal, a notion that stems from a misinterpretation of the Witchcraft

Ordinance act (1925) which has for a long time been assumed to regulate traditional medical practice (Nyamwaya, 1992). However, most legal experts argue that the Ordinance does not really relate to beneficial therapeutic practice. It reads:

"Any person who holds himself out as a witchdoctor able to cause fear, annoyance or injury to another in mind, person or property, or who pretends to exercise any kind of supernatural power, witchcraft, sorcery or enchantment calculated to cause such fear, annoyance or injury shall be guilty of an offence and shall be liable to imprisonment of either description for a term not exceeding five years".

Due to this unclear legal status, many prominent people make use of the traditional medical care discreetly fearing social and legal sanctions which could result from public exposure (Nyamwaya, 1992).

It is important for traditional medicine practitioners to operate within a clearly defined organisational framework. The framework is lacking in Kenya. There is no government related infrastructural arrangement to facilitate regulation of registration. There is an association of traditional healers, but the association tends to cater only for those practitioners with a propensity for publicity, mainly as a way of attracting clients; Publicity – shy practitioners have not joined the association, which is itself an expensive undertaking costing upward of Ksh.1000/= per practitioner.(Nyamwaya, 1992). Some scholars think that

traditional medicine or at least aspects of it, should be incorporated into the existing official health care system (Ademuwagun, 1979: 158).

It is proposed that a specific statute be enacted to facilitate the operation of traditional medicine in Kenya and should cover such issues as:-

i) Financing of traditional medicine

ii) Registration and certification

ii) Training of practitioners

iv) Quality control

v) Research and development and

vi) Interaction with Western-type medicine.

It is proposed further that the Government of Kenya and relevant non-governmental Organisations set aside resources and develop a mechanism for facilitating technical development of traditional medicine. Such development should include: -

i) Chemical analysis of drugs and study of their pharmacology.

ii) Documentation of the therapeutic techniques used by traditional practitioners with a view to promoting those, which have proved to be efficacious, and development of training curricula.

In conclusion, while research and other evidence indicate that traditional medicine is widely used in Kenya, its use is largely informal and occurs outside the official health care system. This form of health care interacts closely with Western type health care. Although there is no direct interference with traditional medicine in the legal and administrative senses, a number of issues are yet to be sorted out to

enable the specialty to develop and benefit the people of Kenya more (Nyamwaya, 1992).

2.3 Marketing of local herbal based products by the traditional medicine practitioners in comparison with other foreign herbal based products available in Kenya.

The existence of traditional medicine that is not fully recognised in Kenya and that receives little technical support, with hardly any effective regulations has many negative effects to the marketing of herbal based products. A number of the drugs used by traditional medicine practitioners have adverse effects. Moreover the damage done to patients' health by such drugs is not even known.

Due to lack of recognition and regulation of traditional medicine, there is now a proliferation of poorly trained practitioners who are not controlled by either the traditional social system or the modern government administration. Clandestine services can be abused easily because there is no system of sanctions affecting the activities. Users of such services do not necessarily distinguish between legitimate and clandestine forms of services. This situation reinforce the negative attitudes of administrators and Western-type health workers towards the traditional medicine practitioners (Nyamwaya, 1992).

Lack of organisational structures and procedures make it difficult to control malpractice among the practitioners, which is reported frequently. For example clients are lured into paying colossal sums of money for "cures" relating to incurable conditions such as cancer and HIV/AIDS. This lack of professional regulations on practise therefore leads to overcharging. Besides, there are not any

generally accepted rates for the management of the same conditions by different practitioners using their different herbal remedies. Such a situation facilitates the thriving of quacks in traditional medicine practice.

Due to the lack of standardised herbal products across the board and the different methods used in their preparation by different herbalists, there is no common platform that can be used in the marketing of these products. Very little information is available regarding the marketing of these products. The sale and marketing of these products is restricted to the dispensing to individual clients who visit those practitioners in their particular areas of operation.

Mobile herbal medicine practitioners exist and move from town to town with their products and publicise in the local media of their itinerary, which more often than not coincides with market days in the various towns. The location of these "clinics" is normally near a bus stop or any other heavy human traffic area.

Owing to lack of preservatives that would help the herbal remedies keep over a prolonged period of time, small dosages lasting over a short period of time are dispensed.

Karati Rural Service Centre has been serving rural communities in Kenya by applying the concept of appropriate technologies since 1974 (Githae J.,1992).Their products have been wholly consumed in their clinics.

Kenyatta University in Nairobi has started a centre for complimentary medicine and Biotechnology and according to Professor Alloys Orago, the director for the centre, serious product research on alternative medicine has started. They have developed a few herbal products, which they have started marketing as they

continue collecting scientific data before developing them further into capsules and tablets. One such drug is called KU Superman a drug to boost virility and another is an antimalarial herbal product which they are marketing locally and was recently displayed in the local Universities fair at the Kenyatta International Conference Centre (2002)

In Kenya today, there is no known registered pharmaceutical manufacturer who is commercially exploiting the rich herbal resources, by harvesting, processing packaging and marketing the same while at the same time cultivating, conserving and helping in extension of this rich natural resource.

Herbal products from foreign countries like India, China, Japan, Malaysia, Britain etc are packaged into standard modern dosage forms like capsules and tablets. These are normally imported into Kenya by the regular registered pharmaceutical importers and marketed and sold through the conventional marketing channels existing in the country.

Promotion of these products is done by creating awareness through prescribers of medicine, like medical practitioners, clinics, hospitals etc. Product literature is availed which indicates, dosages, side effects and pharmacological action. These products have managed to be integrated into the conventional medicine. Other styles of product promotion include campaigns in the local media and newsprint for the general usage products like those effecting weight loss, hair gain or growth, pimples and smooth beautiful skin.

Owing to their general nature, with several indications for use and some coming as food supplements, they require no special registration and are not governed by the registration that covers conventional medicine. This enables them to be handled by the public when it comes to sales and marketing of the same. They are also to be found in supermarkets, foodstores, pharmacies etc.

Swissgarde (Pty) Ltd is a member of the Health Products Association of Southern Africa, manufacturing a wide range of healthcare, fragrances and toiletries, homecare and skin care products. This extensive product range enables distributors to develop a vast customer base by providing products to satisfy particular customer needs. Distributors are permitted to open their own Swissgarde Franchise Depots provided that certain company criteria are met. The Franchise Depot owner is then entitled to sell products to independent distributors for which they earn volume discounts, as well as recruit and train distributors from the Depot.

The company trains its members of staff and equips them to provide Distributors with the back up and support they need to be successful and also trains them free of charge.

This South Africa Company Swissgarde (Pty) Ltd utilises an innovative multilevel marketing strategy called Network Marketing (NWM). This is a very intelligent and successful way of building a giant business using the multiplier effect.

The principles of Network marketing are as follows: -

i) NWM is a method of selling goods directly from a manufacturer to consumers without a middleman like a retailer or a wholesaler (shopkeeper)

ii) You join NWM Company as a new distributor, and then build your own team or business by encouraging other distributors to join.

iii) Income is generated by purchasing products at a profit with additional income received from the company in the form of volume discounts based on the total sales of the team recruited or sponsored by the Independent Distributor.

NMW therefore enables a product to be distributed straight from the manufacturer to the Distributor with no "middleman" adding to the cost, and so the distributor, by selling the products to the end user customer and recruiting or sponsoring a team of Distributors, is able to earn a substantial income on either part time or full time basis (Swissgarde Business Manual,2002).

CHAPTER III – METHODOLOGY

3.0 Conceptual framework

3.1 Attitude

Attitudes are important because they are presumably related to what consumers think, feel and are inclined to do about an object, such as a product or service, or an event. In a general sense, attitudes refer to how consumers evaluate objects and events around them. Knowing how consumers evaluate products, services, and promotional campaigns is extremely valuable information for a marketer. Attitudes can help explain consistencies in behaviour, such as repeat purchasing or brand loyalty. They may also reflect how consumers are perceiving and interpreting objects and events around them (Zaltman G. et al 1983).

An attitude can be described as a learned disposition to respond in a consistently favourable or unfavourable manner with respect to a given object (Fishbein and Icek, 1975). The important dimensions of this definition especially regarding attitude towards local herbal based products are that: -

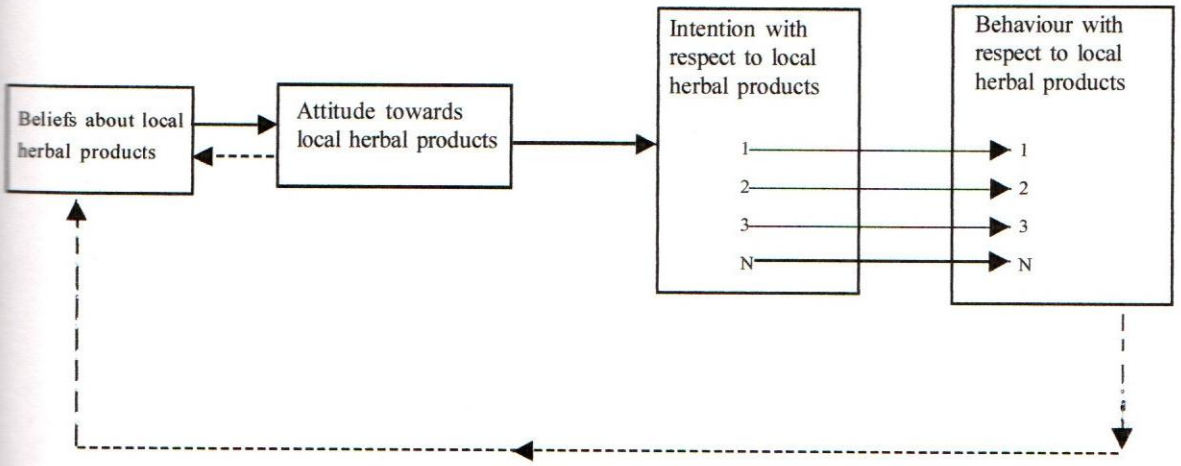
The attitude towards these products is learned.

The attitude involves a predisposition or tendency to behave in a certain way.

The behavioral response towards the local products will be consistently favourable or unfavourable.

A conceptual framework can be designed that relates beliefs, attitudes, intentions and behaviours with respect to local herbal products.

Fig.3.1 Schematic presentation of a conceptual framework relating beliefs, attitudes, intentions and behaviours with respect to local herbal products.



Legend

_____ Influence

-------- Feedback

Model adopted from Martin Fishbein and Icek Ajzen. Belief, Attitude, intention and Behaviour, copy right 1975

A belief is a state of knowledge in psychological terms referred to as cognition. Beliefs represent the amount of information a consumer has and in this particular case about local herbal products. There are three types of beliefs; descriptive beliefs, inferential beliefs and informational beliefs. Descriptive beliefs are formed as a result of direct experience. Inferential beliefs may be based on descriptive beliefs in part and what is known from past experience. They generally involve a subjective interpretation of a descriptive belief.

Informational beliefs are formed as a result of having accepted information from outside source.

Operationally, a belief in local herbal products will be measured as the subjective probability that a link between the local herbal product and an attribute to the same actually exists. That is, a belief will be measured as a consumer's own personal feeling about how likely it is that the local herbal product and a particular attribute are related.

A value is a desired state of affairs. It helps define what is good and what is bad. Values may be based on what a society as a whole defines as good and bad e.g. cultural value or on an individual definition of good and bad e.g. personal values. These value systems are not necessarily independent and each will influence and shape the others over time. As an example, a consumer of local herbal-based product may value its therapeutic value more than its appearance or taste. The importance of a value determines how much weight that value will have in shaping the consumer's attitudes.

According to the Fishbein model, the mathematical product of a belief times a value yields an attitude. An overall attitude however is not formed on the basis of any one belief or any one value. Rather the overall attitude is represented by the sum of all these individual attitudes, favourable and unfavourable towards specific attributes of the local herbal product in this case. Individual attitudes may be favourable or unfavourable, strong or weak, important or unimportant

3.2 Marketing

The British Institute of marketing defines marketing as "the management process responsible for identifying, anticipating and satisfying customer requirements profitably". From this definition, the first emphasis in on the fact that marketing is a management function which, like other specialist managerial functions, has its particular expertise and responsibilities. These responsibilities involve the vital tasks of identifying market needs, of anticipating trends in demand, and of planning to supply, at a profit, acceptable products and services. Sensitivity to the perceived needs of the consumer, is the first step towards marketing effectiveness. In Peter Drucker's vivid phrasing: "Marketing – is the whole business seen from the point of view of its final result, that is from the consumer's point of view"(Drucker, Peter F., 1973). Marketing has two particular characteristics or qualities: it is a philosophy based on customer orientation and satisfaction: a way of thinking about the business in terms of customer satisfaction. But as Kotler says: "It is one thing to exhort a customer orientation and another to implement it. Several steps must be taken by the firm wishing truly to practice a customer orientation" (Kotler, Philip, 1984). Concepts, if they are to be fruitful, have to be applied, so marketing has to be implemented through effective management.

Hence, marketing is an activity which, inspired by its basic philosophy, and working closely with other specialist functions of management, helps to stimulate demand for those products and services that can be supplied, profitably within one's resources.

The core product is the herbal medicine which addresses the question, what is the buyer really buying? This is the problem solving benefit that the consumer seeks when buying the herbal product. The actual product has five characteristics: quality level, features, design, a brand name and packaging. The augmented product has additional consumer service and benefits like delivery, credit, after sale service and warranty.

The local herbal medicine business presents only the core product and even then in a very individual way that cater for the immediate population that visit the herbal medicine practitioners. Issues of hygiene, high quality presentation, product design and packaging are largely ignored. Marketing as a system with its several subsystems is never practiced. These include: -

The product - The method of packaging of the local herbal based products leaves a lot to be desired. Product planning and development is never done.

The price - Pricing of the local herbal products, is inconsistent owing to the lack of a standard product.

Promotion - Advertising and unsubstantiated claims of efficacy of the local herbal products is unconvincing.

The place - There are no established channels of distribution and sales are individualised.

The people - Open information on the local herbal products is not available to the people and practitioners treat these products with a lot of secrecy.

3.3 Sampling and Data collection.

This was an exploratory research study, which comprised of three segments.

i) A questionnaire to individuals visiting randomly selected pharmacies in Nakuru Town.

ii) A questionnaire to selected herbalists in Nakuru District.

iii) A questionnaire to pharmaceutical manufacturing firms in Kenya.

Nakuru town was conveniently selected to represent the Kenyan towns and cities. In order to make up for the possible high variance among the respondents in the population and to get a high level of confidence in the data and the estimates, a sample size of two hundred was judgmentally selected as representative of the population. There were twelve Pharmacy and Poisons Board of Kenya registered pharmacies with sitting resident pharmacists and ten of these were randomly selected. Using random numbers entry and equal interval progression. Twenty semi -structured questionnaires were given to each pharmacy for respondents to fill in and for collection later. The respondents became the units of observation.

The questionnaire contained both closed and open-ended questions and was designed to provide the following information: -

i) The attitude of the respondents to the various attributes of local herbal products.

ii) The strength of the belief that the attribute is related to the local herbal products

iii) The value of this attribute to the responde. nt.

The intent to behave and the subjective norm concerning the behaviour was ignored for reasons indicated in the conceptual framework.

To operationalise the measurement of attitude, inferences based on self-reports of beliefs, feelings and behaviours were weighted. The four point Likert Scales were used (Summated Scales) The respondents indicated a degree of agreement or disagreement with each of a series of general statements related to the local herbal products. The levels of agreement or disagreement were then scored in such a way as to consistently reflect positive (favourable) and negative (unfavourable) attitudes and the scores were then summated for each respondent. The neutral point on the scale was deliberately skipped to give the research a more meaningful response.

A list of practicing herbalists in Nakuru District and their locations were given out by the Ministry of Culture and Social Service at the Rift Valley Provincial office. A list of seventy seven of them was obtained as the registered ones or those whose applications were being processed and the list dated from 1982. Efforts to locate them on the ground proved difficult as most of them had either closed down or migrated. Snowball sampling technique was hence applied and the researcher managed to get fifty-four herbalists which formed the sample frame and was representative of the population.

The questionnaire contained both closed and open ended questions and was designed to elicit the following information:-

i) Personal data including age, gender, and religion.

ii) The practitioner's knowledge, length of practice, client flow, charges per client and the current formulation of their products.

iii) Obstacles that hinder development of their products into modern dosage forms.

iv) Their attitude towards development of their products into modern dosage forms and possible integration into conventional healthcare systems in Kenya.

v) The distribution and marketing infrastructure in place for the herbalists products

The registered pharmaceutical manufacturers in Kenya by the Pharmacy and Poisons Board were thirty-two and all but two were operating in Nairobi. Some were subsidiaries of Multinational firms while others were locally in-corporated. Due to their small number, all were selected and formed the population. The units of observation of the population or the target respondents were the chief executive officers, the managing directors, production managers and marketing executives of these companies.

The questionnaire was designed to get the following information:-

i) The obstacles hindering the development of local herbal products.

ii) The cost of such development if it was to happen.

iii) The perception of the respondents of the concept of manufacturing local herbal products.

iv) Competition existing with foreign and imported herbal products.

v) The market potential of such products.

vi) The marketing infrastructure that would be necessary to market such products.

CHAPTER IV – RESULTS AND DISCUSSION

In this section the data from the completed questionnaires was summarised and presented in form of tables, percentages and mean scores, graphs and other presentations available from the computer program SPSS (Statistical Package for the Social Sciences). This package was able to reduce massive and complex database into a smaller set of explanatory factors.

There were three operational study segments with different data outputs.

i) Herbal product questionnaires by respondents visiting pharmacies run by resident pharmacists in Nakuru Town.

ii) Herbalists information questionnaires

iii) Pharmaceutical manufacturers information questionnaires.

4.1 Respondents visiting pharmacies information pertaining to local herbal products

The four points Likert Scale was used to assess how the respondents perceived a statement. Those that scored four perceived the statement to be very important and those who scored one perceived it to be unimportant. The attitude index was calculated by subtracting from each attitude statement, the percentage of respondents who found the statement important (score four and three) from the percentage of those who perceived it to be unimportant (score one and two). The positive attitude index indicated that the respondents found the attribute important

(favourable) while a negative index indicated that the statement was found to be unimportant (unfavourable).

Table 4.1(a) –Attitude index on attributes pertaining to local herbal products by consumers.

		Favourable		Unfavourable		
Attribute of local herbal products	Valid per cent	4	3	11.5	1	Index
Efficacy	79.5	22.5	48.0	44.5	1.5	61.5
Safety on Usage	98.5	24.0	53.5	33.0	4.5	56.5
Cost	91.0	26.0	45.5	43.5	8.0	51.9
Hygiene	99.5	10.5	34.5	25.5	10.5	-9.5
Quality	98.0	8.0	47.5	25.5	9.5	13.0
Pleasantness	98.0	11.0	30.5	9.0	13.0	-15.0
Dependability	99.0	9.5	56.0	7.5	8.5	32.0
Fashionability	99.5	20.0	45.5	16.5	9.0	31.5
Formulation into modern dosage forms	98.5	45.0	35.5	16.5	9.0	62.5
Contribution to Disease treatment in Kenya	98.5	22.5	66.5	16.5	2.0	79.5
Urgency to formulate into modern dosage forms	98.5	31.0	46.0	16.5	5.0	55.5

Source: Field Data

Graph 1 Attitude on attributes pertaining to local herbal products by consumers

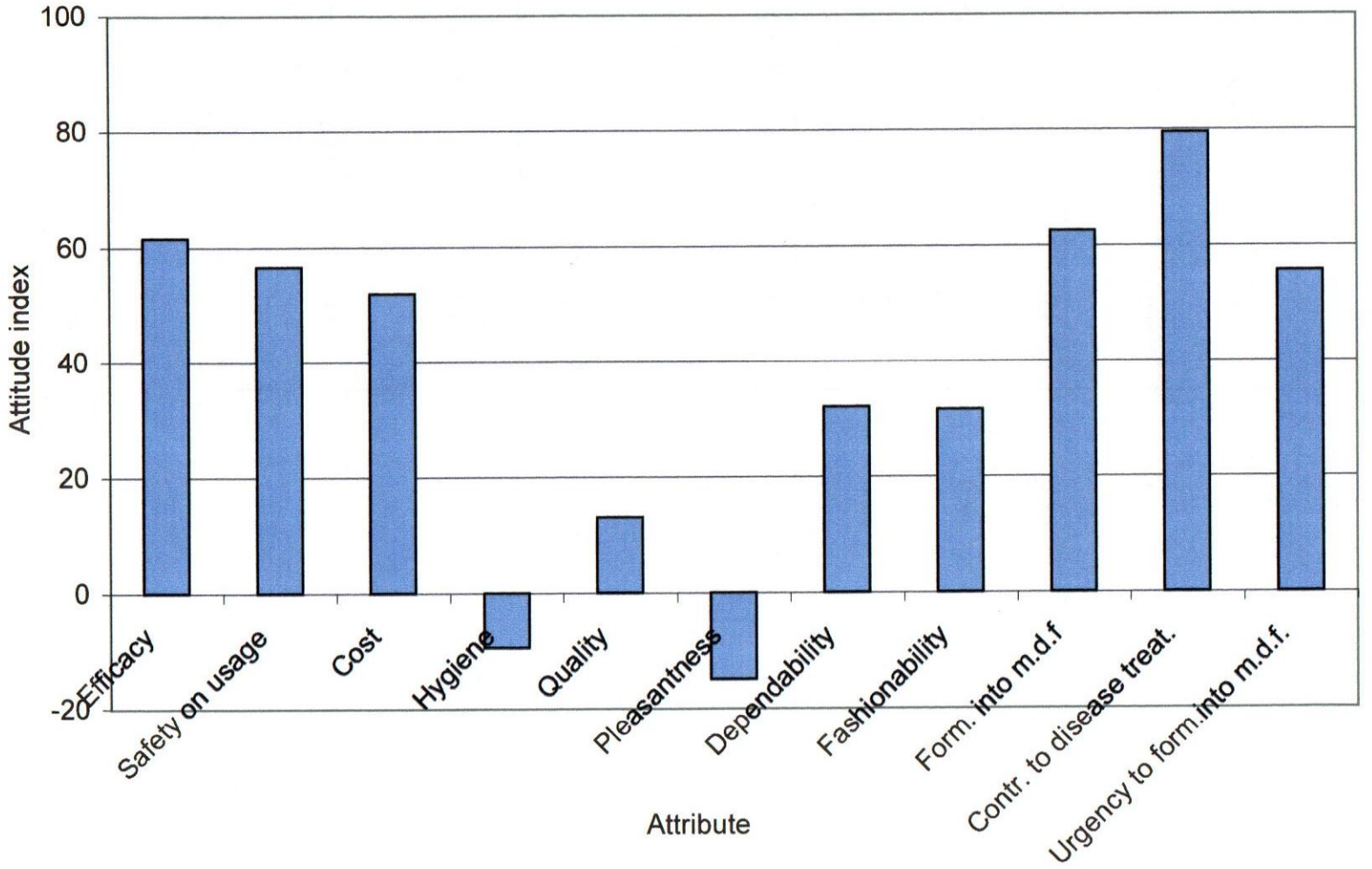


Table 4.1(b) - Descriptive statistics of attributes pertaining to local herbal products by consumers.

Attribute of local herbal products	Mean	Std Deviation	Std Error mean
Efficacy	3.51	1.40	0.99
Safety on Usage	2.94	0.85	0.06
Cost	2.72	1.20	0.85
Hygiene	2.44	0.84	0.59
Quality	2.50	0.85	0.60
Pleasantness	2.54	0.92	0.65
Dependability	2.65	0.81	0.57
Fashionability	2.76	0.89	0.63
Formulation into modern dosage forms	3.14	1.01	0.72
Contribution to Disease treatment in Kenya	3.07	0.72	0.51
Urgency to formulate into modern dosage forms	3.00	0.90	0.06

Source: Field Data

The respondents perceived the various attributes of the local herbal products differently. Some were perceived to be more important than others and these attained a higher attitude index. Contribution of local herbal products with an index of 0.795 or 79.5% was considered important by 89.5% of the respondents who filled in the attribute in the questionnaire.

Respondents felt that local herbal products if formulated into modern dosage forms would be more appealing, acceptable and more widely used (attitude index of 0.625 or 62.5%) and the urgency to do this was felt to be important (Attitude index 5.55 or 55.5%)

The efficacy and safety on usage of the local herbal products were viewed favourably with an attitude index of 61.5% and 56.5% respectively. The cost and dependability of the same was also viewed favourably although on a lesser scale.

The quality of the local herbal products scored quite low with an attitude index of 13.0%. Most respondents had an unfavourable attitude towards the hygiene under which the products were prepared in and also their taste and appearance which was summarised as unpleasant (attitude index of -9.5% and -15.0% respectively)

The mean is the average of a set of scores similar to that of the Four point Likert Scale and is also the measure of central tendency. A high value meant that the respondents were largely in agreement of the statement on the attribute of the local herbal products like in efficacy, formulation into modern dosage forms and the urgency to do so and the contribution to disease treatment in Kenya (mean

scores of 3.51, 3.14, 3.0 and 3.07 respectively). Lower values meant the converse. Because of the large sample (200) the sample mean can be assumed to be that of the population with a minimal standard error.

This is a measure of dispersion and gave the extent to which scores in the distribution deviated from the mean. This value was obtained by subtracting the mean from each score. The bigger the value, the larger the deviation from the mean denoting greater variability as in efficacy, cost and formulation attributes with a standard deviation of 1.4, 1.2 and 1.01 respectively. The small standard deviation in the other attributes of less than 1.0 denoted less variability of scores in the distribution or the variance.

Cross tabulation of the relevant variables was done to determine the presence and degree of association between pairs of the variables. In this exercise it did not matter which variable was dependent or independent.

The Chi-squares of the relevant attributes were done to compare observed and expected values. This had the relevance of determining the distribution of responses yielded by the survey, whether these reflect genuine differences in the population or whether the same distribution could have arisen purely by chance.

Table 4.1(c) Chi-square Test on attributes pertaining to local herbal products by consumers.

Attribute	Chi-square	Degrees of freedom	Asymptotic Significance
Efficacy	128.90	4	0.00
Safety on Usage	173.30	4	0.00
Cost	102.35	4	0.00
Hygiene	134.70	4	0.00
Quality	150.35	4	0.00
Pleasantness	111.65	4	0.00
Dependability	192.45	4	0.00
Fashionability	117.95	4	0.00
Formulation into modern dosage forms	299.10	4	0.00
Contribution to Disease treatment in Kenya	299.10	4	0.00
Urgency to formulate into modern dosage forms	137.65	4	0.00

Source: Field Data

The significance of all the attributes stated indicate that there is no likelihood that the observed values could have occurred by chance.

4.2 Herbalists information pertaining to local herbal products

Table 4.2 (a) – Attitude index on attributes pertaining to local herbal products by herbalists.

		Important		Unimportant		
Attribute	Valid Per cent	4	3	2	1	Index
Integration with modern healthcare system	100	9.3	77.8	13.0	0	74.1
Desire to package into modern dosage forms	100	13	70.4	16.7	0	66.7
Patience preference to modern dosage formulation	96.3	3.7	68.5	22.2	1.9	48.1

Source: Field Data

Graph 2 Attitude on attributes pertaining to local herbal products by herbalists

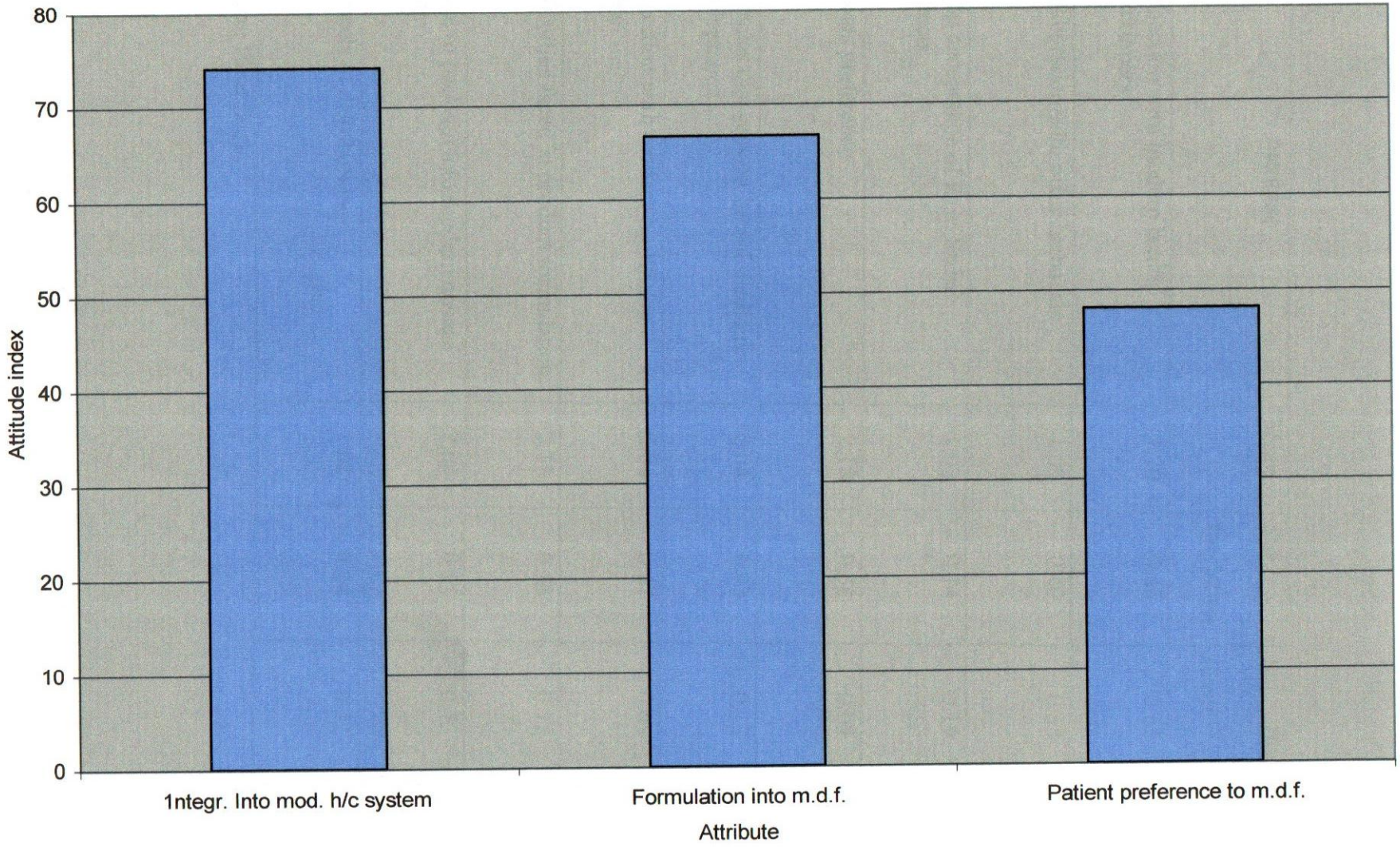


Table 4.2(b) – Descriptive statistics of attributes on local herbal products by herbalists.

Attribute	Mean	Std Deviation	St Error mean
Connection with modern health practitioners	1.70	0.46	0.63
Collaboration with other herbalists	1.09	0.40	0.55
Social acceptance of local herbal products	1.02	0.14	0.19
Patients preference	2.15	0.68	0.09
Obstacles that prevent herbal medicine development	2.04	0.93	0.13
Integration with modern healthcare system	2.04	0.47	0.65
Difficulties faced in product formulation	2.15	0.53	0.72
Desire to package into modern dosage forms	2.04	0.55	0.75
Channels of distribution	1.02	0.24	0.32

Source: Field Data

Table 4.2(c) Chi-square test on attributes pertaining to local herbal products by herbalists.

Attribute	Chi-square	Degrees of freedom	Asymptotic Significance
Connection with modern health practitioners	8.96	1	0.003
Collaboration with other herbalists	61.44	2	0.000
Social acceptance of local herbal products	50.07	1	0.000
Integration with modern healthcare system	48.11	2	0.000
Channels of distribution	90.78	2	0.000
Difficulties faced in product formulation	111.04	3	0.000
Desire to package into modern dosage forms	33.44	2	0.000
Obstacles that prevent herbal medicine development	17.33	2	0.000
Patients preference	86.93	4	0.000

Source: Field Data

Most of the herbal medicine practitioners favourably perceived integration with modern healthcare systems with an attitude index of 0.741 or 74.1%. The desire to package their products into modern dosage forms ranked very high too with an index of 0.667 or 66.7%.

The major constraints in developing the herbal products into modern dosage forms lay largely in lack of technology to do so (59.3% of the respondents), followed by lack of knowledge to do so (14.8%).

The marketing infrastructure was very poor with 94.4% of the respondents dispensing their herbal products to their clients only and 3.7% distributing to other herbal medicine practitioners.

The most incapacitating difficulty lay in harvesting of raw materials with 87% of respondents citing it as a hindrance to development of their business.

Difficulties in preparation, packaging (in the contemporary form) and lack of raw materials were not serious difficulties to them.

There was a low standard deviation (less than 1) in almost as the relevant factors indicating a small variance in scores in the distribution.

Most of the practitioners got their knowledge from a relative (77.8%) and 37% of them had been practicing for more than 20 years. 70.4% of them did not have any connection with modern health care practitioners. 98% of them favourably viewed their practice as a socially accepted discipline 90.7% of the respondents conveyed their knowledge to researchers and other future practitioners mostly from the family.

4.2 The pharmaceutical manufacturers information pertaining to local herbal products

Here again the four point Likert Scale was used to determine the importance of an attribute or how favorable or unfavorable it was viewed.

The major attributes are as depicted in Table 4.3 (a).

Table 4.3(a) attitude index on attributes pertaining to local herbal products by pharmaceutical manufacturers.

	Favourable			Unfavourable		
Attribute	Valid per cent	4	3	2	1	Index
Formulation into modern dosage forms	91.7	5.0	41.7	0	0	91.7
Market potential of such products	100	16.7	54.2	29.2	0	41.5
Return on investment of undertaking	100	20.8	54.2	16.7	8.3	50.0
Competition from imported herbal products	100	20.9	29.2	41.7	8.3	33.4
Integration into modern healthcare facilities	95.8	58.3	29.2	8.3	0	79.2
Export potential of such products	100	8.3	45.8	33.3	12.5	8.3
Future of such products	100	54.2	37.5	8.3	0	83.4

Source: Field Data

Graph 3 Attitude on attributes pertaining to local herbal products by pharmaceutical manufacturers

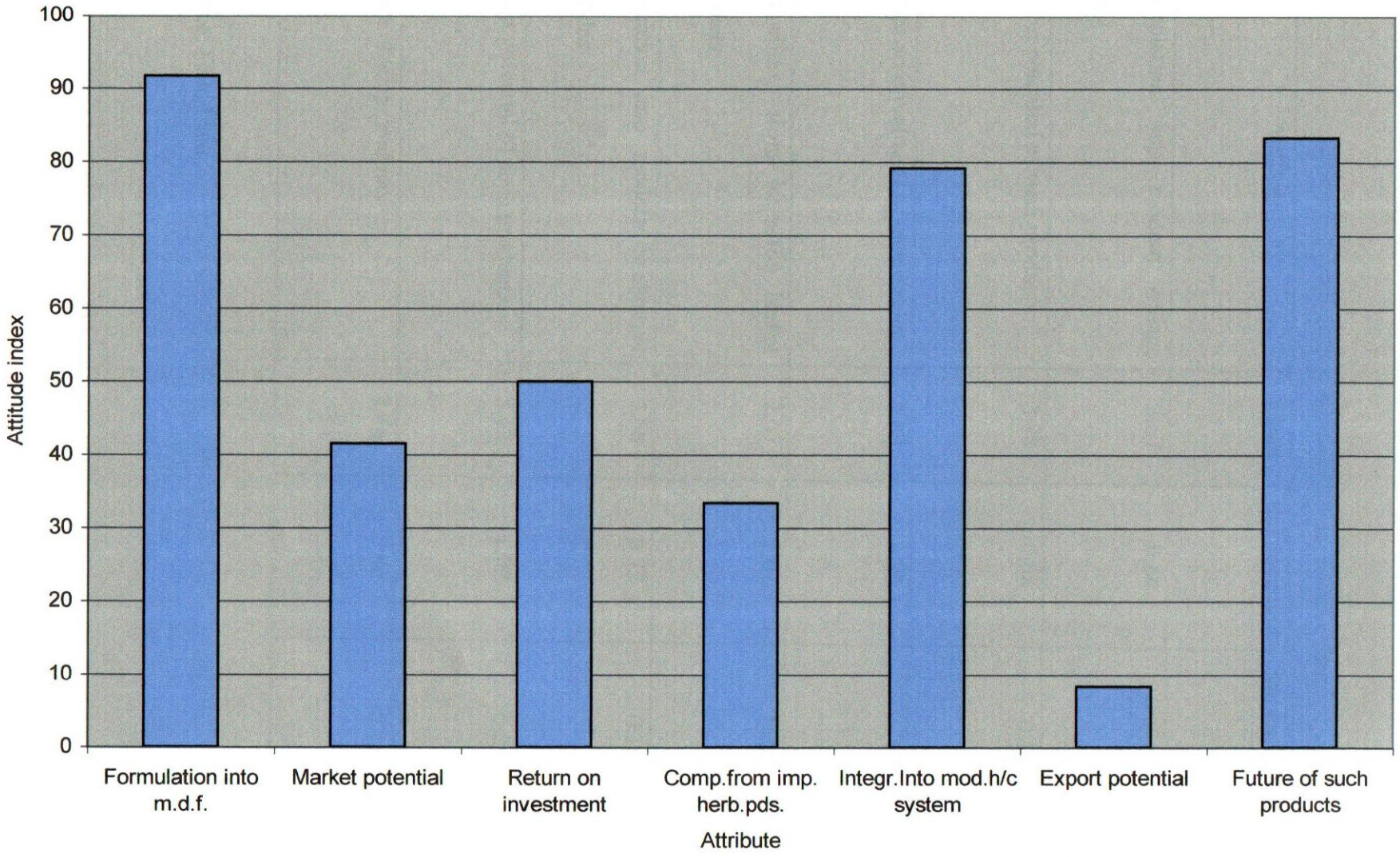


Table 4.3(b) Descriptive statistics of attributes pertaining to local herbal products by pharmaceutical manufacturers.

Attribute	Mean	Std deviation	Std error mean
Formulation into modern dosage forms	3.67	0.64	0.13
Market potential of such products	3.88	0.68	0.14
Return on investment of undertaking	3.88	0.85	0.17
Competition from imported herbal products	2.67	1.01	0.21
Integration into modern healthcare facilities	3.58	0.72	0.15
Export potential of such products	3.42	1.02	0.21
Future of such products	3.46	0.66	0.13

Source: Field Data

Table 4.3(c) Chi-square test on attributes pertaining to local herbal products by pharmaceutical manufacturers.

Attribute	Chi-square	Degrees of freedom	Asymptotic significance
Formulation into modern dosage forms	7.00	2	0.03
Market potential of such products	5.25	2	0.07
Return on investment of undertaking	11.67	3	0.01
Competition from imported herbal products	11.42	4	0.02
Integration into modern healthcare facilities	17.67	3	0.00
Export potential of such products	16.42	4	0.00
Future of such products	7.75	2	0.02

Source: Field Data

As depicted in table 4.3 (a), 22 pharmaceutical manufacturers out of the twenty-four visited stated that formulation of local herbal products could be easily formulated into modern dosage forms. The market potential of such products was favourably viewed by 20 of these firms giving a positive attitude index of 0.415

or 50%. Competition of such products from imported herbal products was felt to be very acute and the attitude index was 33.4%.

The possibility of integration of local dosage forms products after formulation into modern dosage forms into conventional health systems was favourably viewed with a positive attitude index of 0.792 or 79.2%. The future of such formulated products was favourably viewed to be very bright with an attitude index of 0.834 or 83.4%.

The standard deviation was less than one for most of the variable attributes other than the attributes of competition from imported herbal products (1.01) and export potential of such products (1.02). Both had a minimum score value of 1 and maximum of 5 with a mean of 2.67 and 3.42 respectively. This means that, there was wider variance in the attribute scores selected by the respondents. The standard error was however very small (less than 1) meaning that the sampling error was small (whole population selected with a 75% response).

The observed and expected values are compared. The low chi-square indicates the size of the distribution. There were few items in the distribution itself. The low asymptotic significance indicated a low probability of chance occurrence in the observed values (Table 4.3c)

Only four pharmaceutical manufacturers had ever thought of undertaking the project of developing and formulating local herbal products into modern dosage forms. This was mainly due to the huge capital outlay which six firms

approximated at over 50 million Kenya shillings, seven firms at between twenty and fifty million and eight firms estimated at between ten & twenty million. This was a major hindrance to development of local herbal based products business in Kenya as evidenced by the little activity in this field.

CHAPTER V – CONCLUSIONS AND RECOMMENDATIONS

This chapter summarises the research findings, which are discussed in relation to the objectives of the study. A conclusion is made of the study, the scope, limitations and assumptions made while undertaking the research are cited. Suggestions for further research is given by the researcher in order to increase the wealth of already existing knowledge.

5.1 Summary of results.

This study sought to determine the local constraints hindering the development of local herbal products in Kenya into modern, convenient and standardised dosage forms that would easily be integrated into modern healthcare systems and compete effectively with foreign imported herbal products.

The study was divided into three segments in order to seek answers to questions useful in giving a solution to the perceived problem.

The first segment included the consumers whose attitude towards local herbal products needed to be studied.

The second segment included herbal medicine practitioners. The researcher wanted to establish the obstacles the herbalist faced that hindered him from developing his products into acceptable, pleasant, high quality and hygienically prepared standardised dosage forms. Their attitude towards such change needed to be established and the possibility of integrating the newly formulated products

into the conventional healthcare system. The researcher also wanted to establish the marketing infrastructure in place for the herbalist's products. Semi structured questionnaires with closed and open ended questions were designed to capture the information required. The exercise was carried out over a three week period. The study found out that the overall attitude by consumers is favourable and they trusted the efficacy, safety on usage and largely felt that the products could easily be integrated into modern healthcare systems. They felt that if only the quality, formulation into pleasant modern dosage forms and the hygiene aspects of the herbal products were improved, the products would have a major contribution to the declining health services and would have a major impact in disease treatment in Kenya.

The study revealed that lack of technology, financial constraints and scarcity of raw materials were major hindrances to development of local herbal products in Kenya by herbalists. It was also found out that there was no distribution or marketing infrastructure by the herbalists and the one in place was rudimentary and very limiting since it involved dispensing of the products to the clients only and to a lesser extent, wholesaling to other herbalists.

The study revealed that the Kenyan pharmaceutical manufacturing firms largely believe that local herbal products can easily be formulated into modern standardised dosage forms since technology exists to do so. The return on investment of such an undertaking would be high in the long run but high capital investment was necessary. The marketing and distribution strategy of selling such

products could be put in place to follow the existing channels of distribution of distributor, wholesaler, and retailer chain. Integration into the conventional healthcare system was also possible and this would have a major contribution to healthcare services in Kenya. The future of the local herbal products developed as described would indeed have a very bright future.

5.2 Conclusion

The use of herbal products is increasing in developing and developed countries and it is becoming increasingly clear that solutions to some health problems that have been afflicting man lie in herbal medicine. The significance of medical pluralism where both herbal or alternative medicine and conventional medicine exist together is in the understanding of the provision of healthcare within a given society. It has been revealed by the study that herbal medicine has a big role to play in Kenya and the perception and attitude of the same is positive across the spectrum of the stakeholders, the citizen, the herbalist and the pharmaceutical manufacturer. Adequate policy and legal framework should be put in place to develop and strengthen herbal medicine and to integrate it into the national health system and to protect the intellectual properties and genetic rights of the indigenous source.

5.3 Limitations/ assumptions of the study

The convenience sampling of Nakuru town for the survey of consumer

attitude on local herbal products, while rightly placed in an area rich with the natural resource of herbal medicine with its many practitioners may not have been fully representative of the other towns and cities in Kenya but nevertheless gave a really good indication of the situation.

Some respondents visiting pharmacies indicated their willingness to fill in the questionnaire from home and drop it back later. Some dropped them back but others didn't. Replacement questionnaires were then given out to be filled by other respondents. A few respondents refused to fill in some sensitive questions like income and the level of education. These blanks were treated as missing variables. A few others gave conflicting information like indicating that they are not conversant with imported herbal products and then proceeding to fill in description attribute of the same. This again was treated as a null set of attributes.

Herbalists are known to be secretive people and sometimes mysterious. Out of the seventy-seven registered herbalists by the Ministry of culture and social services at the provincial office since 1982 in Nakuru, only less than ten could be traced, some having closed down, migrated to other areas or died. The snowballing technique of one herbalist directing the researcher to another was hence adopted and a total of fifty-four were interviewed with the help of a field assistant. Some herbalists completely refused to be interviewed citing the excuse of having to consult their colleagues over the issue before filling in the questionnaire.

Others refused to disclose any information expressing fears that the knowledge and information given out will be exploited by foreigners with a direct or indirect effect of pushing them out of business. Others requested for some reward in

whatever form. Having been the beginning of the year, calendars were given out to some for motivation for as long as they lasted. The sample frame was however representative.

Great efforts were expended to only interview the genuine, well-established and revered herbalists in order to eliminate quacks, sorcerers and witches. A few indicated that they are not herbalists but diviners and only pray for sick people. Licenses to practice were quite rare and in some cases, correspondence from the administration was normally hanged out as the license. Some thought they were being interviewed for purposes of taking legal action against them for practicing without licenses.

The small number of pharmaceutical manufacturers in Kenya formed the population and at the same time the sample frame with chief executive officer or managing directors, marketing or production executives being units of observation.

Some respondents refused to fill in the questionnaires giving the reason that this can only be done after a board decision to do so. Others said they have to refer to some foreign authorities in their headquarters outside the country.

Some had a managerial policy of never filling in questionnaires. Others were just too busy to fill in one. The cost of establishing a herbal medicine plant may have been inaccurately stated given the fast changing strength of the Kenya shilling. However, a wide margin was designed in the questionnaire to minimise the error.

It is dangerous to assume that knowledge of attitudes is in itself predictive of behavioural consequences in specific situations. A complex relationship exists between attitude and behaviour. There is almost universal agreement that attitude tends to have only a comparatively low relationship to actual behaviour towards the object of the attitude.

It has been pointed out that much of the research into attitudinal preference as a predictor of behaviour has been correlational in nature: Positive associations between attitude and behaviour are obtained and a causal relation has been only inferred, but no direct test of attitude as the cause and subsequent behaviour as the effect has been made. Changes in attitude may not necessarily be followed by changes in behaviour. However, generally, attitudes are viewed as pre-dispositions to specific kinds of behaviour related to certain objects and in this particular study local herbal products.

Time & money were also major constraints. The time available to undertake the research was quite short and resources for data collection were scarce.

5.4 Suggestions for further studies and research.

As stated above attitude change may not necessarily be followed by changes in behaviour and as a result, the researcher recommends further research to incorporate intention (I) to perform a certain behavioural (B).

This would indeed vindicate Fishbein and Icek second model which incorporates intention to behave and introduces the respondents evaluation of a behaviour. This

would give a better understanding of the real perception the consumer has on the local herbal products and indeed his behaviour if such products were formulated otherwise.

Further research is also recommended by the researcher to determine the extent of secrecy of local herbalists and establish exactly how much they know, and how much they hide and why. This would indeed be very useful in order for an education program to be designed to let them understand their usefulness in society and their contribution to national healthcare. This would improve the understanding and enable, research, exploitation, propagation and sustenance of herbal medicine for improved standard of living and quality of life for man.

The researcher also suggests further research into the extent to which demand exists of these local herbal products, the actual return on investment, capital requirement of such a plant and the possibility of cultivation of raw materials on a large scale.

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APPENDIX ONE

HERBAL MEDICINE INFORMATION QUESTIONNAIRE BY RESPONDENTS VISITING PHARMACIES IN NAKURU TOWN.

Section A – Personal Data

1.1 Age---------- Date: ----------

a) Less than 20years ☐

b) 20-30 years ☐

c) 30-40 years ☐

d) 40-50 years ☐

e) Over 50 years ☐

1.2 Sex

a) Male ☐

b) Female ☐

1.3 Religion

a) Christian ☐

b) Muslim ☐

c) Hindu ☐

d) Buddhist ☐

e) Other (specify)----------

1.4 Educational level

a) Primary level ☐

b) Secondary level ☐

c) University level ☐

d) Post-graduate level ☐

e) Other (specify) ----------

1.5 Gross salary or Income per month

a) Less than 5000 shillings ☐

b) Between 5000 and 10,000 shillings ☐

c) Between 10,000 and 20,000 shillings ☐

d) Between 20,000 and 30,000 shillings ☐

e) Over 30,000 shillings ☐

Section B - Herbal medicine data

2.1 How many times have you used herbal medicine?

a) Very many times ☐

b) Between 10 and 20 times ☐

c) Between 5 and 10 times ☐

d) Less than 5 times ☐

e) Never ☐

2.2 In your opinion how effective was the medicine?

a) Very effective ☐

b) Effective ☐

c) Ineffective ☐

d) Very ineffective ☐

e) Don't know ☐

2.3 Local herbal medicine is very safe to use

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.4 Local herbal medicine is cheap and readily available

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.5 Local herbal medicine is hygienically prepared and well packaged

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.6 Local herbal medicine is of high quality

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.7 Local herbal medicine is dependable

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.8 Local herbal medicine is unpleasant

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.9 Local herbal medicine is old fashioned

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

3.0 Local herbal medicine is socially accepted

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

3.1 Local herbal medicine is more effective than modern medicine

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

3.2 Local herbal medicine if formulated into tablets and capsules would be more appealing, acceptable and more widely used.

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

3.3 Is it possible for herbal medicine to be used side by side with conventional medicine?

a) Yes ☐

b) No ☐

3.4 If your answer to question 3.3 is No, give reasons.

3.5 Do you sometimes use herbal and conventional medicine for the same condition or the same illness?

a) Yes ☐

b) No ☐

3.6 If your answer to questions 3.5 is Yes, do you use the medicines

a) At the same time? ☐

b) At different times? ☐

3.7 How would you rate the contribution of local herbal medicine to treat diseases in Kenya?

a) Extremely important ☐

b) Important ☐

c) Unimportant ☐

d) Completely useless ☐

3.8 How urgent is the necessity to package local medicine into modern dosage forms like tablets, capsules and injections?

a) Extremely urgent ☐

b) Urgent ☐

c) Not urgent ☐

d) Not urgent at all ☐

3.9 Are you conversant with imported herbal medicine?

a) Yes ☐

c) N o ☐

4.0 If your answer to question 3.9 is yes, how would you describe it?

a) Well packaged ☐

b) Poorly packaged ☐

c) Widely acceptable ☐

d) Unacceptable ☐

e) Appealing ☐

f) Not appealing ☐

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION

APPENDIX TWO

HERBALISTS INFORMATION ON CONSTRAINTS HINDERING HERBAL MEDICINES DEVELOPMENT IN KENYA

Name of Herbalist ----------

Address ----------

Age----------Gender----------Religion---------- Date----------

1.0 From whom have you acquired the knowledge?

a) Relative ☐

b) Traditional healer ☐

c) Self acquired ☐

d) Religious books ☐

1.1 How long have you been practicing as a herbalist?

a) Less than 5 years ☐

b) Between 5 and 10 years ☐

c) Between 10 and 15 years ☐

d) Between 15 and 20 years ☐

e) More than 20 years ☐

1.2 Do you have any connection with modern health practitioners?

a) Yes ☐

b) No ☐

1.3 Do you have any collaboration with other herbalists?

a) Yes ☐

b) No ☐

1.4 Do you provide modern drugs along with the herbal medicine?

a) Yes ☐

b) No ☐

1.5. Do you record history of your patients?

a) Yes ☐

b) No ☐

1.6 What measures do you take in case of failure of your treatment?

a) Nothing ☐

b) Give advice to visit modern healthcare service ☐

c) Attempt other medicines or add the dosage ☐

d) Refer to other herbalists ☐

e) All patients are cured ☐

1.7 Is herbal medicine widely community accepted?

a) Yes ☐

b) No ☐

1.8 Do you convey your knowledge to researchers and future practitioners?

a) Yes ☐

b) No ☐

1.9 Herbal medicine can be integrated with modern health care systems.

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.0 In which form do you prepare your products?

a) Liquids ☐

b) Powders ☐

c) Whole plant parts ☐

d) Tablets ☐

e) Capsules ☐

Other (specify) ----------

2.1 Do you distribute your products through other channels or you just dispense them to your clients?

a) To clients only ☐

b) Wholesale to other herbalists ☐

c) Distribute to other regions in the country ☐

d) Export out of the country ☐

Other (specify) ----------

2.2 How long can your products stay after preparation?

a) Less than two weeks ☐

b) Between 2 weeks and 1 month ☐

c) Between 1 month and 2 months ☐

d) Between 2 months and 1 year ☐

e) Over 1 year ☐

2.3 What is the biggest obstacle that you face when preparing your products and in which order of importance from 1 to 4?

a) Lack of raw materials ☐

b) Difficulties in harvesting of raw materials ☐

c) Difficulties in preparation of the products. ☐

d) Difficulties in packaging the product ☐

2.4 Do you have other stations for your practice that you visit in Nakuru town or other places in the country?

a) Yes ☐

b) No ☐

2.5 If the answer to question number 2.4 is yes, how many and how often do you visit them?

2.6 How much would you like to package your products into modern dosage forms like tablets, capsules and sealed bottles?

a) Would like it very much ☐

b) Would like it ☐

c) Dislike it ☐

d) Strongly dislike it ☐

2.7 What are your reasons for your answer in question 2.6?

2.8 What prevents you from packaging your products the way you would like as stated in your answer to question 2.6?

a) Lack of knowledge in doing so ☐

b) Lack of technology to do so ☐

c) Lack of interest ☐

d) It would be too expensive to do so ☐

e) Other (specify) ----------

2.9 Your clients would prefer the modern dosage form of your products more than your current form.

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

3.0 What are your reasons for your answer in question 2.9?

3.1 How many clients do you see per day on average?

a) Less than five ☐

b) Between 5 and 10 ☐

c) Between 10 and 20 ☐

d) Between 20 and 50 ☐

e) More than 50 ☐

3.2 What is your average charge per patient?

a) Less than 100 shillings ☐

b) Between 100 and 200 shillings ☐

c) Between 200 and 500 shillings ☐

d) Between 500 and 1000 shillings. ☐

e) Other (specify) ----------

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION

APPENDIX THREE

PHARMACEUTICAL MANUFACTURERS INFORMATION QUESTIONNAIRE ON CONSTRAINTS HINDERING HERBAL MEDICINES DEVELOPMENT IN KENYA

Name of Firm ----------

Address ----------

Designation of Respondent ----------Date----------

1.1 According to your own opinion, can the local herbal resources be formulated into modern dosage forms like, tablets, capsules, injections etc.

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

1.2 What is your justification for your answer in question 1.1?

1.3 What would be the market potential of such locally manufactured herbal products?

a) Extremely high ☐

b) High ☐

c) Moderate ☐

d) Low ☐

e) None ☐

1.4 What do you think would be the return on investment of such an undertaking?

a) Very high ☐

b) High ☐

c) Moderate ☐

d) Low ☐

e) Negative ☐

1.5 What in your opinion would be an approximate amount required to establish such a plant on a basic level?

a) Less than 10 million Kenya shillings ☐

b)Between 10 and 20 million kenya Shillings ☐

c) Between 20 and 50 million Kenya shillings ☐

d) Over 50 million Kenya shillings ☐

e) Don't know ☐

1.6 Has your firm ever considered undertaking such a project?

a) Yes ☐

b) No ☐

1.7 What major obstacles would one face in establishing such a plant?

1.8 What kind of competition would the locally manufactured herbal products face from the foreign imported herbal products?

a) Very acute ☐

b) Acute ☐

c) Moderate ☐

d) Low ☐

e) None ☐

1.9 It is possible for locally manufactured herbal products to be integrated into the modern healthcare system like hospitals, dispensaries, clinics etc?

a) Strongly agree ☐

b) Agree ☐

c) Disagree ☐

d) Strongly disagree ☐

2.0 Is it possible for the locally manufactured herbal products to be marketed through the conventional channels of distribution of distributor, wholesaler & retailer chain?

a) Yes ☐

b) No ☐

2.1 If the answer to question 2.0 is No, why?

2.2 What in your opinion would be the export potential of such products?

a) Very high ☐

b) High ☐

c) Moderate ☐

d) Low ☐

e) None ☐

2.3 Do you think the unit cost of the products would be cheaper than the existing equivalent in modern conventional medicine?

a) Yes ☐

b) No ☐

2.4 Is it possible to patent such products in Kenya?

a) Yes ☐

b) No ☐

2.6 If your answer to question 2.4 is No, why?

2.7 What problems would you anticipate while patenting the products?

2.7 What future in terms of acceptability by the consumer would such products have?

a) Very bright ☐

b) Bright ☐

c) Poor ☐

d) None ☐

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION

APPENDIX FOUR

LIST OF RANDOMLY SELECTED PHARMACIES REGISTERED BY THE PHARMACY AND POISONS BOARD OF KENYA WITH SITTING RESIDENT PHARMACISTS IN NAKURU TOWN.

1. BLUE RAYS CHEMISTS LTD
2. MIDRIFT PHARMACY LTD
3. NAKURU MEDICAL STORES LTD
4. SANCO CHEMISTS LTD
5. PEAKAY CHEMISTS LTD
6. ROSEWAY PHARMACY LTD
7. BAMBOO CHEMISTS LTD
8. METROPOLITAN CHEMISTS LTD
9. CARE CHEMISTS LTD
10. PYAT CO. LTD

APPENDIX FIVE

LIST OF LOCAL PHARMACEUTICAL MANUFACTURERS INCLUDED IN THE STUDY

1. HIGHTECH PHARMACEUTICALS & RESEARCH LTD
2. DAWA PHARMACEUTICALS LTD
3. NOVELTY MANUFACTURING LTD
4. COSMOS LTD
5. BETA HEALTHCARE LTD
6. PHARMACEUTICAL PRODUCTS LTD
7. UNIVERSAL PHARMACY (K) LTD
8. LABORATORY AND ALLIED LTD
9. MAC'S PHARMACEUTICALS LTD
10. DIDY PHARMACEUTICALS LTD
11. GESTO PHARMACEUTICALS LTD
12. PHARMA & HORTICULTURAL INPUTS LTD
13. U.B. PHARMA LTD
14. TWIGA PHARMACEUTICALS LTD
15. REGAL PHARMACEUTICALS LTD
16. PHARMACEUTICAL MANUFACTURING LTD
17. NICHOLAS LABORATORIES LTD
18. NEEMA PHARMACEUTICALS LTD

19. MEDVET PRODUCTS LTD

20. SPHINX PHARMACEUTICALS LTD

21. COOPER KENYA LTD

22. BIODEAL LABORATORIES LTD

23. CADILLA PHARMACEUTICALS E.A LTD