Afya Jumuishi : towards Interprofessional collaboration between traditional and modern medical practitioners in the Mara Region of Tanzania

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Summary

This scientific inquiry is a correlational human resource and organisational policy-oriented study, which has been conducted in the Mara Region of Tanzania. It specifically investigates major factors, which correlate to interprofessional collaborative behaviours in the context of health service delivery between traditional and modern medical practitioners. Interprofessional collaboration is a *sine qua non* stage towards fully *integrated health care* encapsulated in a coined Swahili concept of *afya jumuishi*.

The sample population in this study includes 82 female and 111 male medical practitioners from both Modern Medicine (MM) and Traditional Medicine (TM) systems in the Mara Region. While modern medical practitioners include, doctors, clinicians, nurses, counsellors, workers in laboratory, radiography, pharmacy, dentistry, environmental health, community health, and medical training while traditional medical practitioners include traditional healers, traditional birth attendants, circumcisers, faith healers, traditional medicines vendors and predictors.

The background instigating situation of such scientific study, is the prevailing problem of the existence of a non- fully integrated medical system in Tanzania as it is in other places especially in developing countries. Previous studies have discussed and presented practical recommendations towards improvement of *efficiency, equity* and *effectiveness* through Health Sector Reform (1993); Gene 1987; World Bank 1993; Frenk 1994; Gilshon *et al. 1*994; Mc Pake 1994, Chabot *et al.* (*eds*) 1995; Kagodya & Mchomvu 1996; WHO 1998; Berman & Bossert 2000). Despite, the political and strategic will echoed in the *Tanzania Development Vision 2025 Pg. 10-11*, as well as in the *Health Sector Strategic Plan (July 2009 - June 2015),* the implicit focus in the activities have mainly been only on the modern health sector. Therefore, there is a discrepancy between the ideals in Tanzanian health sector reform proclamation and realities on promotion and collaboration with traditional medical practitioners in the country.

Even with the existence of the Tanzanian Act No. 23 of 2002, which governs traditional and alternative medical practices, the actors and activities of health sector reform in the Ministry of Health and Social Welfare (2009) have not fully implemented the practical enforcement of this Law to promote efficient traditional health services which include the notable but disserted indigenous health knowledge, skills and products. Traditional Medicine (TM) embodies those indigenous health therapies, medicaments, techniques, knowledge and skills which are not based on modern, allopathic medical principles but have both significant positive and negative effects to the health of the people. Such traditional services have continued to be utilised by people of all socio-demographic profiles in the country.

In the contemporary world, people and their families from all population groups from all geographical areas, have access to goods and services either from the traditional, alternative or modern medical systems, or from a combination of those systems for health improvement, environmental care as well as for acquisition of certain social status as they live in a medical pluralistic configuration. Like in many African countries, people in Tanzania live in an era of medical pluralism. The utilisation patterns correlate to psychosocial factors of beliefs, attitudes and knowledge of the indigenous people more than other factors such as socio-economic status and socio–demographic factors (*cf.* Slikkerveer 1990). Whilst, there are examples of successful interprofessional collaboration among medical practitioners in the modern health sector among physicians, counsellors, pharmacists, health facility chaplains, nurses and other paramedics, in Africa, there are scant such efforts of interprofessional collaboration between modern and

traditional medical practitioners. In such scenario, medical systems have suffered from poor co-ordination and non-integrated care to clients and patients.

Undeniably, in the last century, the world has witnessed in the Modern Medicine (MM) new major transformations in human health, such as development of new vaccines, medicines, high-tech equipment, advanced medical research, eradication of certain diseases like *Rinderpest* and *Smallpox* and a notable general trend of increase in life expectancy.

Notwithstanding, these developments have not covered the gap of inaccessibility to health care to about 40% of the World population, especially in the developing countries. Moreover, most of the medicines and high-tech services are unaffordable to the majority of the population who has to live on less than one dollar per day. It is from this premise of the traditional medical system, with its relatively affordable costs and embedding in the local culture, that it has to be incorporated and institutionally supported into the formal health care system. In this way, Traditional Medicine (TM) will be able to contribute substantially to the health of people as it has been confirmed and promoted in the World Health Report (WHO 2011).

Since the 1970s, a radical change towards integration between modern (Western) and traditional and alternative medicine is being engineered by many health policy makers and practitioners, (Pearce 1982). Through the World Health Organisation (WHO), the African Union Heads of States declared the period 2000 - 2010 as *the African Decade on African Traditional Medicine* (Kofi-Tsekpo, 2004). This is a declaration which considers the importance and the approval by governments and international institutions on the need to full integrate Traditional Medicine (TM) as well as Complementary and Alternative Medicine (CAM) into the national health sector. The call of the World Health Organisation (WHO) to full integration, aims at officially recognising and incorporating it into all areas of provision of health care. Specifically, Traditional Medicine (TM) has to be included into the country's policy of the provision of medicines, which has to be regulated, and traditional health services should be available at all health facilities (both private & public). Also, traditional services should be reimbursed under health insurances, while education on Traditional Medicine (TM) should be available, and relevant research should be undertaken. Before reaching the fully integration state, it is crucial to insist on interprofessional collaboration between practitioners of the traditional and modern medical systems, as both are being visited by clients.

This research investigates to what levels the different independent and intervening factors correlate with the dependent factors of interprofessional collaborative behaviours between traditional and modern medical practitioners of the Mara Region of Tanzania. The reality and challenges of the level of collaboration between them are also explored.

The general aim of this study is to describe, analyse and document major factors, which correlate to collaborative behaviour in the context of health service delivery between traditional and modern medical practitioners in the Mara Region on Tanzania. Both qualitative and quantitative research methodologies have been employed to collect data and to analyse the different categories of factors both at the individual and system levels, which interact in such interprofessional collaboration between practitioners of the two systems (traditional and modern). Some insights of challenges and realities of Traditional Medicine (TM) in practice are also noted and highlighted to underscore the prospects of Tanzania on the road to fully integrated health care system. In order to realise this general aim, seven specific objectives will have to be achieved as follows:

Firstly, to discuss the theoretical orientation on interprofessional collaboration as a level towards integrated health care delivery in a pluralistic medical configuration as a major part of the health sector reforms,

Secondary, to provide a description of the Mara Region of Tanzania as the research setting in terms of its sociography, livelihood patterns and cultural characteristics, as well as the health of her inhabitants,

Thirdly, to describe the Tanzanian health sector reforms and challenges facing the contemporary Tanzanian traditional medical system,

Fourthly, to outline major components of factors and their descriptions which correlate with patterns of interprofessional collaborative behaviours between traditional and modern medical practitioners,

Fifthly, to present a list with indigenous classification of medicinal plants commonly used in the Mara Region of Tanzania,

Sixthly, to analyse data and present results up to the resulting ultimate analytical model, with mathematical indication of the strengths of correlations between blocks of variables interacting in an interprofessional collaborative behaviours between traditional and modern medical practitioners of the Mara Region; and

Seventhly, to present the study's theoretical, methodological and policy implications. Consequently, giving appropriate recommendations gearing towards integration and improvement of Traditional Medicine (TM) into the formal health care system of Tanzanian for the provision of quality, accessible, affordable and humane health services to the entire population.

This research is presented in eight chapters:

Chapter I presents in the introduction an overview of the recent developments in health and healing in Africa, and Tanzania. It provides a glimpse of the health care development in the pre-colonial, colonial and postcolonial times; medical pluralism and the concept of an integrated medical system; and the general aim, specific objectives, structure and organisation of the study. The chapter elaborates the link between culture and health on medical pluralism, integrated health care in Tanzania, and explains the existence and development of both traditional and modern medicine in Tanzania. The chapter clarifies the concept of interprofessional collaboration in a pluralistic medical configuration and underscores its necessity towards fully integrated health care system in Tanzania.

Chapter II captures the theoretical orientation. It begins with an overview of concepts which reveals the recognition of components of culture in affecting human health, the paradigm shift trend in health policy and management, the importance of ethnobotanical knowledge systems to effective health promotion and the existing theories towards successfully interprofessional collaboration. In addition, a conceptualisation of interprofessional collaboration is presented. A culture serves as a road map for both perceiving and interacting with the world. One's culture influences or determines the way in which a person believes, thinks, perceives, behaves, eats, sleeps, puts on clothes, relates to others and to the environment, works, consults in case of pain, interprets diseases and ill health in general. Concisely, cultures shape people's health as much as their genes do. Therefore, there is a close link between culture and health of the people in

their particular environment. Various definitions are presented, such as from Medical Anthropology (Herman 2001), Medical Sociology (White 2002), and Health Psychology (Taylor 2003) as well as from UNESCO and all other related research institutes and centres. There are five major common themes on components of culture. Such components can be deduced either as they shape the health of people or as they affect interprofessional collaboration between traditional and modern medical practitioners, the *raison d'être* of this study.

Communication Components: consisting of languages, symbols etc. Both in traditional and modern medicine, there exist diverse communication patterns and symbolisms with different meaning in their services. The different naming and classification of diseases and ill health by use of different languages can be one of the major hindrance towards behavioural patterns of mutual working together between the two groups on the same customer.

Cognitive Components: consisting of ideas, assumptions, knowledge, technologies, accounts etc. When the type and levels of education is very much different between the two groups of modern and traditional medical practitioners, their interventional approach stands apart. For example, just the different level of knowledge of human anatomy and physiology has been used by some modern medical practitioners to despise the indigenous knowledge acquired by traditional medical practitioners.

Behavioural Components: consisting of mores, norms, values, laws, rituals, beliefs, folkways, religion, intimacy and economics. Religious beliefs of people, values, norms etc. have affected the way they behave. Organisational culture and the 'groupthink' factors either motivate or demotivate the process of resource exchange and joint working between the two medical systems.

Material Components (Material Culture): consisting of created objects, artwork, fashions, designs, clothes, housing, means of transport, infrastructures, food products, tools etc. When the trend has been focusing to acquiring advanced technical medical equipment and big structures of modern health facilities, traditional healers and traditional midwives feel isolated from the national health care sector.

Organisational Components: consisting of social structures, political organisations, family and organisational ties and relations, membership identity, gender, politics, institutional support etc. The traditional medical system encompasses different organisational settings with a simple organisational structure, which has fewer hierarchical levels. Generally, it displays a kind of cobweb communication network *vis-a-vis* the large structured network of the modern medical system, which has several hierarchical levels. In order to integrate the traditional and modern medical systems, a country needs not only to take into consideration its present situation, but also other related institutional, support and policy framework issues.

Therefore, all the five mentioned components of culture have a direct or indirect link to this study in two folds. Firstly, when culture is seen as the base, which prompts re-evaluation on the importance of Traditional Medicine (TM) and its practitioners in the overall contribution of health levels of the people, and secondly, when the research topic of collaboration of practitioners is understood to be a behavioural act of either exchange of resources and or working together in a certain specific cultural setting and value system.

The classical definition of health by the World Health Organization (WHO 1948): *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"* shows clearly health has a social component. More crucial from a wider socio-cultural context, ill health as a process brings a person into a *sick role*, which evaluates human ability or failure to meet the obligation of the society, (*cf.* Mechanic 1995). In summary, the *sick role* model suggests that, being sick has in itself some customary rights such as being exempted from social roles and that the sick are not responsible to their conditions. However, the model also contends that sick people have obligation to consult competent medical practitioners to be able to recover from sickness in relation to the norms of the specific societies where they belong. It is explained that, the individual experiences symptoms of illness and then later accepts the *sick role* as his or her role, which is limited before assuming the 'patient role' lastly.This concept is also well acceptable in the Tanzanian context, whereby there is a difference between 'having illness' and being categorized as a 'patient', well differentiated in the Jita ethnic group of the Mara Region as *Omwasibhwa* and *Omurwaye* respectively. As such, the sick model has been criticized that, it fits more in short term than long term illnesses. Some sick people may not necessarily give up their social roles, but may resist dependency and avoid to be known publicly especially when the disease is stigmatized in the society. Furthermore, the model of the *sick role* can also be criticised as in the case of alcoholism (*cf.* Chalfont & Kurtz 1971).

A graphical presentation known as the *Mandala of Health* by Hankock & Perkins (1985), presents a holistic guide towards understanding health and the way cultures and environment shape peoples' health. It shows that, the culture of the community affects family livelihood, the spiritual life, psychological experiences, work patterns, political and legal framework, social organisation and medical systems, which bring about different lifestyles which affect the health of individuals as biological factors also do. Consequently, all those factors are interdependent, hence triggering the causal – impacts to the overall health levels. To sum up on determinants of health, studies have shown that ill conditions are not only dependent on biological facts but also on social and socio-cultural determinants (*cf.* Koos 1954; Marmot 2005; WHO 2010). Consequently as also found by Slikkerveer (1990), these determinants affect people's choice in health care utilisation. Slikkerveer (1990) explains how Bank (1973) deduces the process in which an individual goes through before seeking help from a medical practitioner.

The chapter also explains the way traditional African societies used to determine the roles and management of Traditional Medicine (TM). Apart from other numerous uses of plants such as for food, food additives, flavours, timber, aromatic, cosmetic and other purposes, the societies of Tanzania like in most African countries have used proportions of medicinal plants, be it alone or in concoctions with other plants, animal or mineral products, in powder, tincture, ashes, soot, fumes, conserves, syrups, charms or in raw form for different purposes which are beneficial to the community and to the individual members.

In one of the questions to respondents in this research, results show that among the top five selected roles of Traditional Medicine (TM) in the society include: *disease prevention, disease diagnosis, disease curative, human protection against evil acts and property protection.* The other additional roles of Traditional Medicine (TM) include, *locating natural resources such as in mining and fishing ('obhudubhi bhwa jiswi') and for stopping alcoholism and other drug addictions.*

Customary, these roles determined the speciality and therefore the title of the traditional practitioner. It is of no surprise in this research that, only 7.3% of the practitioners from the modern medical system think that Traditional Medicine (TM) has no significant role whatsoever, while the rest 92.7 % are on the contrary side. All (100%) of the traditional

medical practitioners do acknowledge the significance of Traditional Medicine (TM) in the society.

Chapter III outlines in detail the research design and the analytical model, which includes the applied research approach, the research problem statement, research questions, research methodology, scope and the conceptual model to be used and further elaborated in Chapter VII. The Chapter stresses the use of the *Leiden Ethnosystems Approach.* This approach embarks on the early work of Garfinkel (1964) and Circourel (1967), and is later developed into three basic concepts from Structural Anthropology by Slikkerveer (1982; 1990; 1996), with a view to offer an interdisciplinary non-normative framework to allow comparison and synthesis of different factors in an *emic* as opposed to *etic* view, which interact in complex ways. The three basic concepts underlying this research approach of indigenous knowledge systems, includes the *Participant's View (PV), the Field of Ethnological Study (FES)* and *the Historical Dimension (HD)* all applied in the context of interprofessional collaboration between traditional and modern medical practitioners. The approach has been widely used in recent days under the *Leiden Ethnosystems and Development* (LEAD) program of Leiden University, in policy based studies in Agriculture, Wildlife Management, Environmental Conservation, Health Services Utilisation, Economics, Microfinance, Communication and Management of Medical Systems worldwide, where complex systems of indigenous people are investigated as they interact with modern systems (*cf.* Van den Breemer *et al*. 1989; Leakey & Slikkerveer 1991b; Van den Breemer *et al*. 1991; Adams & Slikkerveer 1996; Slikkerveer & Lionis 1996; Agung 2005; Ibui 2007; Gheneti 2007; Djen Amar 2010; Leurs 2010; Ambaretnani 2012).

Both primary and secondary data were obtained by use of a combination of different research methods and techniques, such as a structured questionnaire administered to medical practitioners; semi-structured interviews to key informants; proceedings of workshop, conducted under the then 'Health Human Resources Capacity Building Project' *Jadi na Utamaduni katika Afya* (JUA); personal observations and through document analysis of various writings such as annual reports and publications related to the subject of interprofessional collaboration in health care.

The operationalisation of the concept of *interprofessional collaboration* as used in the analytical model of this study follows the definition by the '*Centre for Advancement of Collaborative Strategies in Health'* (2003), which defines it as behavioural patterns as part of synergy formation among different professionals. Such behavioural patterns have two interrelated components of dependent factors which include:

- *the behavioural patterns of sharing resources;* and
- *the behavioural patterns of working jointly for clients.*

The analytical model is used in formulation of the questionnaire through a deduced flow as adapted from Kohn & White (1976) by steps from *Concepts* to *Variables* to *Indicators* to *Categories.* The model is further developed by Slikkerveer (1990) and as such built up on seven blocks of variables, which attribute to interprofessional collaborative patterns of behaviours by health functionaries of both medical systems. These variables are independent variables, which include s*ocio-demographic, psycho-social, enabling, trustworthiness, organisational* and *intervening variables* as well as the dependent variables which include *collaborative behavioural patterns of exchange of resources and collaborative behavioural patterns of working jointly for clients and patients.* Through a process of linking concepts into measurable phenomenon, a structured questionnaire is formulated. Finally the Chapter highlights the

performed types of statistical analyses in this study, including the bivariate analysis, the multivariate analysis (OVERALS) and the multiple regression analysis with the selected formula, which brings the study to the construction of the final ultimate model presented in Chapter VII.

Chapter IV presents the background information by describing the research setting which is the Mara Region and Tanzania a country of diverse natural resources as a whole. Here, the geography, and the historical, economic, socio-cultural and political background of the Mara Region and Tanzania as a country are described. The Chapter also explores the study sample population profile including the medical practitioners of both traditional and modern medical systems in the Mara Region.

Chapter V is devoted to the presentation of the general community livelihood patterns from inhabitants of the Mara Region as well as the existing cultural characteristics, which affect directly or indirectly the health of the people of the Mara Region. The Chapter also elaborates the major challenges facing Traditional Medicine (TM) in the region. The general major challenges of the Twenty-First Century facing Traditional Medicine (TM) in the country include:

- Lack of enabling environment towards Traditional Medicine (TM);
- Absence of a mechanism, which promotes integration between modern and Traditional Medicine (TM);
- Weak protection of indigenous intellectual property rights and unsustainable harvesting of medicinal plants;
- Dwindling of natural resources;
- Lack of indigenous information system and reliable data bank;
- The need to carry out education, research and development on Traditional Medicine (TM);
- The problem of safety of products of Traditional Medicine (TM);
- Contextualization of the world's religions on teachings about Traditional Medicine (TM);
- Moral degradation and the breaking of social structures;
- Shocking poverty in the society.

Chapter VI discusses health and healing in the Mara Region. It starts by showing health indicators in the medical system of the country. The general health status and health services in Tanzania, representing the entire country including the Mara Region is shown. Few selected national indicators are compared with those from developing countries in the same continent of Africa (Tunisia and Kenya), from Asia (Indonesia) and from an European country (The Netherlands). Cited major challenges in health care are also presented as the focus in the Tanzanian long-term plan and part of the health sector reforms. The general vision as well as the approach in the way health service delivery is organised is also explained.

Paragraph 6.2 highlights the notable development and changes which have taken places in the medical systems in Tanzanian in the past, from pre-colonial, colonial and post–colonial period of time. The Chapter also describes the major role of the Ministry of Health and Social Welfare (MoHSW). Paragraph 6.3 explains the pluralistic medical configuration in the Mara Region. Such configuration includes, traditional believes on causes of illnesses and remedies; the use of Traditional Medicine (TM) in the region; Modern Medicine (MM) in the region and efforts to promote collaboration between the medical systems.

Chapter VII presents the major qualitative and quantitative findings and the respective statistical analysis by use of the statistical package SPSS Version 20.0 also referred as Predictive Analytics Software (PASW). The interpretation of all Bivariate, Multivariate and Multiple Regression Analyses of blocks of variables shows the interaction with interprofessional collaboration among traditional and modern medical practitioners. In summary, these results show that the level of interprofessional collaboration between practitioners of the two systems is still rather low.

The bivariate analysis reveals the level (frequency) of collaborative behaviour in the exchange of resources ('collexch') by both types of practitioners (traditional and modern) combined (N=193) is 61.7% (low level); 31.6% (medium level) and only 6.7 % (high level). Likewise, the level of collaborative behaviour by working jointly ('collwork') is 64.8% (low level); 32.1% (medium level*)* and only 3.1% (high level). This confirms that there is a notable challenge of low interprofessional collaboration where the majority of both types of medical practitioners continue to give health services to their clients in isolation with less collaboration, a system which need to be improved through an appropriate reform package of the health sector.

A closer observation in the bivariate analysis results, with regards to the level of collaboration between the two different groups of medical practitioners per the two ways of collaborations shows that traditional medical practitioners have a higher level (although in small margin) than their counterparts in the modern medical system in taking the lead to exchange of resources. The frequency scores of the extent of collaborative behaviour in exchange of resources by traditional to modern medical practitioners respectively are: 7.5% to 6.2% (high level); 32.5% to 31.0% (medium level), 60.0% to 62.8% (low level). The frequency scores in the collaborative behaviour in working jointly again favour traditional medical practitioners in taking the lead as compared to modern medical practitioners.

The frequency scores on the level of working jointly between traditional to modern medical practitioners for the same client with health problem is as follows: 3.8% to 3.1% (high level); 37.5% to 32.1% (medium level) and 58.8% to 64.8% (low level). Such results substantiate the qualitative findings, which also recognise an indication of a practical trend where generally traditional medical practitioners seemingly would be willing to participate in collaborative endeavours such as giving their clients referrals towards modern medical practitioners without much resistance as compared to their counterparts of the modern medical system doing the same towards Traditional Medicine (TM).

Between collaborative behaviours of exchanging resources and working jointly, it is generally accepted, that practitioners of both systems are more willing to exchange resources such as information, ideas and give referrals to clients than the practical idea of giving health services jointly towards a client (6.7% to 3.1% for high-level collaboration respectively). The philosophical explanation to this may lie on the rooted fundamental differences between the two systems of health in terms of aspects of care. These major differences as elaborated in Chapter VII include among others, the differences in practitioners' world view, care orientation and approach, focus of care, diagnostic tools, methods as well as the difference in understanding of what medical efficacy is. Therefore, the practitioners of both systems may feel at easy to allow their clients to visit other medical systems available in the region as they wish as it is their right to make rational choices in health care. Such decisions depend on what is available and the perceptions of the clients regarding the level of effectiveness of such services. The collaborative mode of *working jointly* appears more difficult because of their working guiding premises which are either, their professional ethics or their individual beliefs. This may be regarded to be a hindering block when practitioners of both systems may think to engage in

medical practice together with other practitioners with different world views, care orientations and approaches is to compromise to such guiding principles as such.

Multiple correlation co-efficients are obtained as a result of multiple (categorical) regression as a result of *Dimension Reduction – Optimal Scaling.* Multiple correlation co-efficients between the block of variables are obtained as a function of *Eigenvalue* as narrated by Van der Burg (1988) by use of the general canonical correlation formula:

$\rho d=((K\times Ed)-1)/(K-1)$ where; d is the dimension number, K is the number of sets, and E is the eigenvalue. In this study with two sets (independent and depended variables), the specific formula therefore is:

$\rho d = (2 X Ed) - 1$ where; ρd is the multiple correlation co-efficient, *Ed* is the Eigenvalue and the 2 represents the (number) 2 variable sets (independent and dependent variables) in the analysis.

Among all independent variables, *trustworthiness* co-varies strongly in the first dimension than all other variables with interprofessional collaborative behaviour ($\rho 1 = 0.716$). In others words, the way in which practitioners have trust and confidence to each other, the more the likelihood to collaborate as supported in both the theory of reasoned action and the Fogg behavioural model. As noted earlier, *trustworthiness* includes both the capability of being reliable and responsible as well as individual worthy of credibility or authoritative in the speciality. Therefore, practitioners, health planners and the government ought to support in general the activities which improve confidence on traditional medical practitioners, their services and products.

Enabling variables is the second in strength of correlation ($\rho 1= 0.682$) in first dimension. Therefore variables such as the *individual social economic status* and *Government plus community efforts to enhance collaboration* have substantial influence in the way both traditional and modern medical practitioners would collaborate. Therefore, there is a need to address the political will and creation of good conducive environment for interprofessional collaboration between traditional and modern medicine, as well as alternative medicine both at the local and national level. Such enabling efforts, solidifies the required institution and legal support under the Parliamentary Act No. 2 of 2002, which governs Traditional Medicine (TM) and its practitioners in Tanzania.

Psycho-social variables of which multiple correlation coefficients ($\rho 1= 0.544$ ranked the third variables such as *good experience of Traditional Medicine (TM) goods and services; awareness of successful traditional and modern collaborative projects; perceived possibility of good future working relationship in plural medicine; belief on disease medical system specificity* (which makes practitioners and clients believe that certain diseases are better managed by Traditional Medicine (TM) while others are for Modern Medicine (MM)*; attitude, education and awareness of what entails to health services* are important if interprofessional collaboration is to be encourage. This is in agreement with the research results of Caboury *et al.* (2011) where both awareness in terms of interprofessional exposure and expected results were noted among major factors affecting collaboration.

From the analysis it can be observed that at least all the rest of independent variables (socio-demographic and organisational variables) show certain moderate notable influence on interactions ($\rho 1 = 0.372$ and $\rho 1= 0.346$ respectively). Within the socio-demographic block of variables, the *practitioner's professional group* ('profgrup') and *the practitioner's work status* ('orgstat') are moderately significant with the extent in which practitioners would collaborate. In the organisational block of variables, the *organisation efforts towards anti- 'groupthink'*, ('orgthink') and the level of *organisational culture fostering collaboration* ('orgcutur') influence significantly the way traditional and modern medical practitioners would collaborate.

Therefore, the more the organisations are open to accommodate different views and encourage creative and critical thinking the more the likelihood the practitioners to involve in collaborative behaviours with practitioners from the other medical system.

Chapter VIII concludes by enlightening theoretical and methodological implication as well as policy and practical recommendation towards effective and efficient health sector reforms and improvement of interprofessional collaboration among modern and traditional medical practitioners towards Tanzanian fully integrated health care development system. The practical recommendations suggested to health policy makers, medical practitioners, trainers and researchers in health care, religious leaders, non- government organisations, local and central government at large to enhance interprofessional collaboration towards *afya jumuishi* which results into quality integrated health services delivery are as follows:

- leaders and board members of health facilities to sensitize people and discourage the organisational *groupthink* syndrome which has encroached the political and professional ways on decision making and responding to pertinent issues for development of humans and the country as a whole;

- health care trainers to prepare medical practitioners to the change of attitude to appreciate integrated medical system undertakings including collaboration of traditional and modern medical practitioners;

- health care trainers and researchers to acquire the ideological base for the need of interprofessional collaboration and definition for a shared recognition and definition of collaboration between the two medical systems;

- the government to provide mandate and institutional support to traditional and complementary and alternative medical practitioners; their services, organisations and projects;

- to conduct positive critical dialogues and capacity development among health stakeholders frequently;

- the government and learning institutions on human and allied health studies to strengthen research, training and development of indigenous knowledge and natural resources related to health and ill-being;

- religious leaders and theologians to revisit religious doctrines in relation to nurturing good cultural indigenous heritages which have been despised during and post-colonial era;

- the government and non-government organisations to work towards humane international partnership and cooperation with mutual respect for sustainable human development projects;

- The government to develop effective policies linking pharmaceutical and biotechnology sector's interests with improved management of biodiversity. Pharmaceutical companies profiting from indigenous knowledge, need to pay royalties, develop corporate social responsibility projects and promote Traditional Medicine (TM) knowledge and products;

- the government and non-government organisations to develop data-base and strengthening bio-diversity networking within the country and with outside relevant networks;

- the Ministry of Health and Social Welfare, medical practitioners and their associations such as *the Medical Association of Tanzania (MAT),* C*hama cha Waganga na Wakunga wa Tiba Asilia Tanzania (CHAWATIATA)* to ensure improvement of medical products and services offered to the public;

- the government and all local organisations to consider gender equality a crosscutting agenda in order to recognise and give equal opportunities to the marginalized women and children in the society for better health status and valuable socio-economic contributions in the communities.

The conclusion provides an overall summary of what has been presented in the entire dissertation in accordance to the set objectives of this study which envisions to prompt policy makers and health services managers to bring Tanzanians to an efficient level of *afya jumuishi* in the near future.