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The Role of African Traditional Medical Practices in Adolescent Cognitive Skills Development in Oku Sub Division, North West Region of Cameroon

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ABSTRACT

This study set out to investigate the role of African Traditional Medical Practices on the development of adolescent cognitive skills in Oku Sub Division, North West Region of Cameroon. The diagnosis process, the selection of herbs, the preparation of herbs and the treatment process were the activities the study focused on. This study employed the ethnographic research design. This qualitative study was done through interviews and observation. The data collected was analysed through thematic analysis. Participants were sampled purposively and the snow ball technique was equally employed to get the traditional doctors, adolescents who are involved in African Traditional Medicine and their parents or guardians. The findings indicate that adolescents developed numerous cognitive skills in their initiation process as traditional doctors. These skills acquired through their involvement in the diagnosis process, herb selection, herd preparation and treatment process could be classified as social competence, problem solving, decision making, critical thinking and spiritual intelligence.

KEYWORDS: *African Traditional Medicine, youth, cognitive development, diagnosis, herb, treatment, social competence, problem solving, decision making, critical thinking, spiritual intelligence*

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INTRODUCTION

In pre-colonial Africa the traditional education that a child received was through the socialization process, thus, informing the child how to operate within the social, political and cultural realms of the society (Adekunle, 2000; Nunkunya, 2003). This process of socialization was and where applicable today is holistic in nature and encompass the total development of the child to include the physical and spiritual nature of the upbringing of the child (Adekunle, 2000). Whereas in western education which came with colonial rule the tendency is to be 'book taught' and somewhat divorced from the life and culture of the wider community, the African education approach was/is different. The African child through the socialization process acquires knowledge in all fields of endeavour (Adekunle, 2000; Nukunya, 2003). Before the era of colonization, African education was largely based on oracy, which was and still is an integral part of the socialization of a child in Africa (Egbo, 2000; Mautle, 2001) and practical intelligence was the core for the transfer of knowledge, skills and legacy from generation to generation. The transmission of oral traditions was for the continuity of culture, intellectual training, acquisition of vocabulary, and proficiency in one's expression directed towards artistry (Adekunle, 2000; Gyekye, 2003). Practical experience was the major mode of teaching and specific emphasis was placed on physical training, character moulding, respect for elders and peers, intellectual and vocational training, cultural heritage and the acquisition of spiritual and moral values (Gyekye, 2003; Mautle, 2001). The

African through centuries of experimentation and knowledge transmission from one generation to another has developed and practiced means and ways of knowledge construction. This knowledge constructed has always been context specific and also functional. The knowledge passed from one generation to another therefore connects the past, the present and the future. With modernisation and globalisation, some of these systems and practices are fast disappearing. Much research in the past has focussed on myths, legends, religion and politics. With the deepening studies in cultural psychology and cross-cultural psychology, there is a growing interest in Africa about the relationship between indigenous knowledge systems as part of culture and environmental issues (Melvin, 2007). This work on the role of African traditional medical practices on the development of cognitive skills of adolescents seeks to bridge the gap that has long been witnessed in studies that touch on the African reality. The research is inspired from the existence of so many men and women who have had no modern education, yet exhibit so much wisdom and intelligence that could be compared with those who have had modern education. The practice of traditional or indigenous medicine engaged in by adolescents could have an impact on their cognitive skills. The work will also help in revisiting the core African traditional pedagogical approach employed in transferring knowledge and skills.

Theoretical background

Historically, formal education in recent times in the African continent has been largely determined by the West and proliferated during the age of colonialism. According to Pihama and Lee-Morgan (2019), from our natural environment and relational structures that enabled collective wellbeing to our cultural knowledge systems to our languages, and ceremonial practices, colonialism has disrupted and fragmented our ways of being. In the view of Pihama and Lee-Morgan (2019), the colonialists, education was both a target and tool of colonialism, destroying and diminishing the validity and legitimacy of Indigenous education, while simultaneously replacing and reshaping it with an 'education' complicit with the colonial endeavour. Schooling as a formalized colonial structure served as a vehicle for wider imperialist ideological objectives (Pihama and Lee-Morgan, 2019). This colonial education which was mainly literacy oriented as if streamlined for alienation and domination did not consider the indigenous knowledge systems already in practiced by Africans. The relegation of the African indigenous knowledge systems seemed to propose that the indigenous practices and aspects of African culture had nothing to offer as far as the development of cognitive skills were concerned. It is in this vein that an understanding of African traditional practices is of great interest in the enhancement of the Afrocentric perspectives of the advancement of knowledge. The World Health Organization (WHO, 2008) defines traditional medicine as the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.

From classical history, the study of herbs dates back 5,000 years to the ancient Sumerians, who described well-established medicinal uses for plants. According to the Ebers Papyrus (tr. 1937), which records Ancient Egypt's medical practices, from 1552 BC we have some historical facts about traditional medical practice. This Egyptian document is the oldest preserved medical document. It contains 700 magical formulas and folk remedies meant to cure afflictions ranging from crocodile bite to toenail pain and to rid the house of such pests as flies, rats, and scorpions (Ebers Papyrus, 1937). This papyrus contains chapters on intestinal disease, helminthiasis, ophthalmology, dermatology, gynaecology, obstetrics, pregnancy diagnosis, contraception, dentistry, and the surgical treatment of abscesses, tumours, fractures and burns.

Statement of the Problem

Before the era of colonialism, Africans enjoyed an educational system that was contextual and peculiar to their environment. This education was life long, community oriented, functional, had emphasis on practical learning and was holistic (MacOjong, 2008). The colonial epoch greatly brought about the westernization of African Educational systems shifting from this context specific education. According to Seroto (2011) the African child was brought up by the community and educated in the culture and traditions of the community. The curriculum of indigenous education during the pre-colonial period consisted of traditions, legends and tales and the procedures and knowledge associated with rituals which were handed down orally from generation to generation within each tribe. This process was intimately integrated with the social, cultural, artistic, religious and recreational life of the indigenous peoples. With the westernization of the African continent, many beliefs, customs, cultural practices were considered substandard and to be relegated. What is the role of African Traditional medical practices on the development of cognitive

skills of adolescents? This is the question this work seeks to answer and of course the gap to be filled. Very limited study has been carried out in this area of African indigenous practices and no documented study on the traditional medical practices and their role on the development of cognitive skills among the Oku People; thus, the need to investigate the relationship between these concepts in order to inform policy makers about the importance of indigenous practices.

Objective

The objective of this study was to investigate the role of African Traditional Medical Practices in the development of Adolescent Cognitive skills in Oku Sub Division, North West Region of Cameroon. The processes considered in the appraisal of skill transferred and acquisition include diagnosis, herb selection, herb preparation and treatment process.

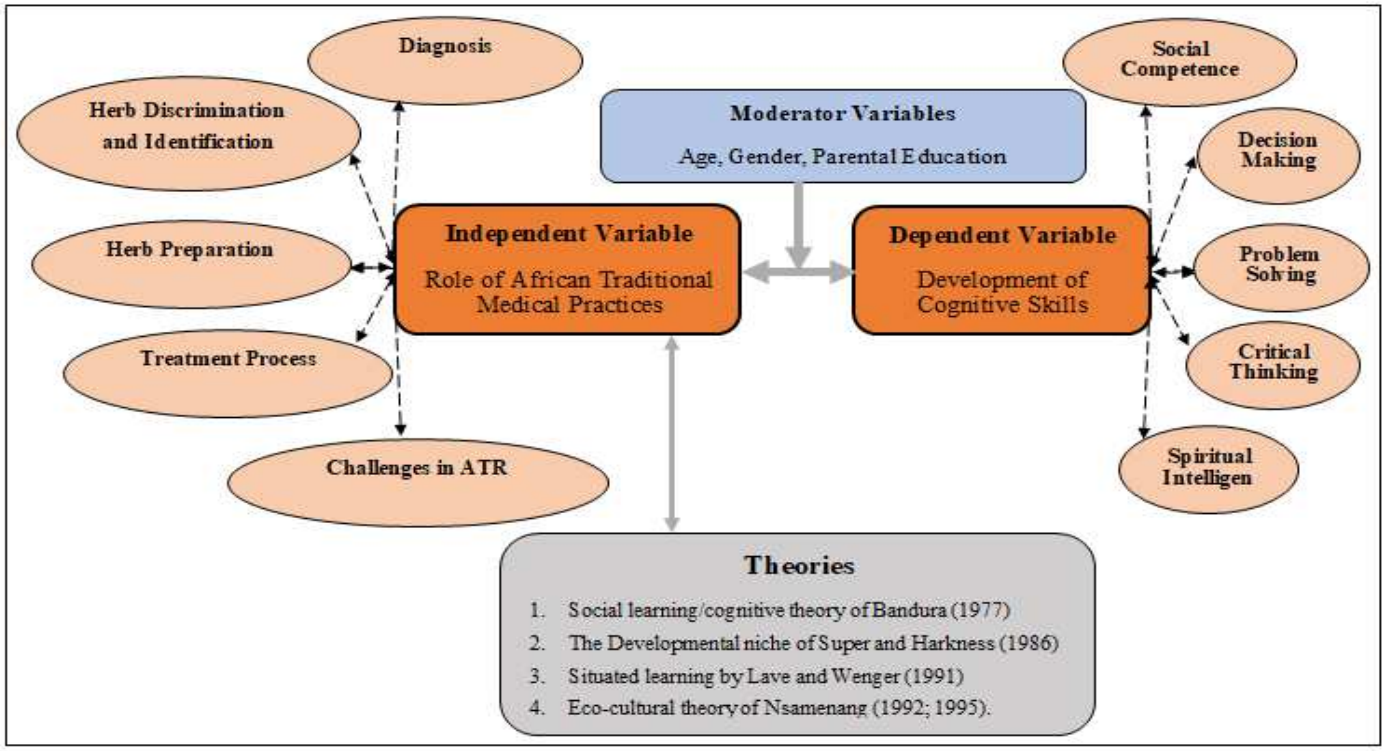

Figure 1: Conceptual diagram characterizing the role of African traditional medical practices on the development of adolescent cognitive skills

Methodology

Research Design

This study utilized the ethnographic research design employing essentially a qualitative approach in data gathering and analysis. Ethnography is a design of inquiry coming from anthropology and sociology in which the researcher studies the shared patterns of behaviors, language, and actions of an intact cultural group in a natural setting over a prolonged period of time. Data collection often involves observations and interviews (Cresswell, 2014). Originally, the idea of a culture was tied to the notion of ethnicity and geographic location, but it has been broadened to include virtually any group or organization. Data were gathered through interviews and observations.

Area of Study

The study was carried out among the Oku people. Oku is a subdivision in Northwest Region, Cameroon. The term Oku also refers to the people who live in this region and the primary language that they speak (although English is also widely spoken). Oku is a rural area with 35 villages (Elak-Oku Council Development Plan, 2012). Historically the People of Oku and their Nso brothers originated from somewhere around Egypt. Due to harsh climatic conditions, they left and settled in Belbele, where they lived a wandering life of hunting. Later on, the Oku people and their Nso brothers moved and settled at the savannah land of Tikari in an area called Rifem as one family where their population grew tremendously. The united family at Tikari later broke up as a result of a succession dispute. Nso, the elder brother left with some traditional belongings of his father to the other side of the river with his supporters where they found a new home.

Sample

The sample of the study was made of 4 traditional doctors, 10 adolescents undergoing initiation to become traditional doctor with their parents or guardians.

Sampling Techniques

Participants were sampled purposively given that people with well-defined characteristics were targeted. This sampling technique was supported by snowball as through a traditional doctor one could get another one.

Data Collection Instrument

Interview guide was designed for each of the three categories of participants as well as an observation check list.

Validity and Reliability of Instrument

Construct validity was check by ensuring that the terminology used were appropriate and suited the study context. To ensure content validity, the interview guide was checked by three specialists in educational psychology. Generally, above 0.75, CVI is satisfactory (Nana, 2018) and in the context of this study, all the three experts validated the final instrument making a CVI of 1. The instrument was pilot tested in a village in Fako Division very far from the study area and feedback from the participants helped in improving on the interview guides.

Data collection process

An authorization to carry out the study was obtained from the Faculty of Education of the University of Buea. This authorization was presented to the chiefs of the villages. The participants were then briefed on the objective of the study, their consent sought, and they were then interviewed.

Method of data processing and analysis

The study employed a qualitative approach. Qualitative information were collected via interviews and observations. Interviews were transcribed and analysed using the process of thematic analysis whereby concepts or ideas were grouped under umbrella terms or key words. The primary documents of textual data were coded for every independent idea as it emerged from the data and for frequency of concepts following the positivism principle, but the interpretation of findings was dominantly qualitative. However, the frequency or grounding also reflects how many times a concept emerged and was a major indicator of emphasis. Precautions were taken to clearly determine the meaning of themes or umbrella term and what they stand for. In the context of this study, to satisfy this requirement, findings were organized in code-grounding-quotation tables whereby themes or codes were clearly explained or described, followed by their grounding or frequency of occurrence and at the same time backed by their related quotations. The code-quotation table ensures the objectivity and reliability of qualitative analysis in the sense that if codes/concepts/umbrella terms and their descriptions can be subjective to relative error, the quotations are grounded and real and thus help compensate for potential lexicographical bias (Nana, 2018). Conceptual diagrams concluded the analytical stage which consists in relating concepts or ideas in a meaningful and logical manner, what is termed concept-building in qualitative analysis (Nana, 2018).

Findings

Traditional medicine skills that impact adolescents' development of cognitive skills

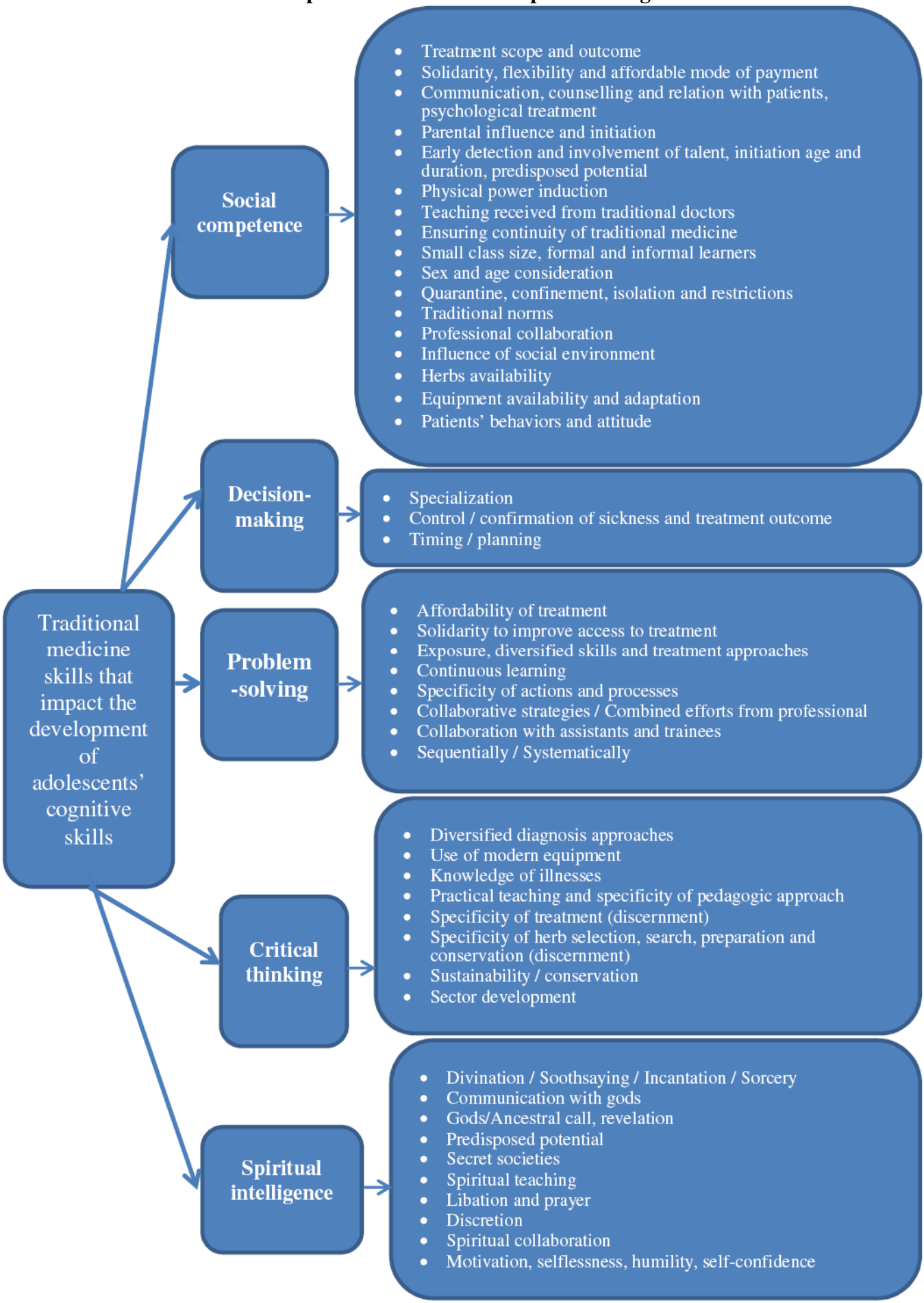

Figure 2: Conceptual diagram depicting the traditional medicine skills that impact adolescents'' development of cognitive skills

Cognitive skills developed by adolescents in their process of learning traditional medicine

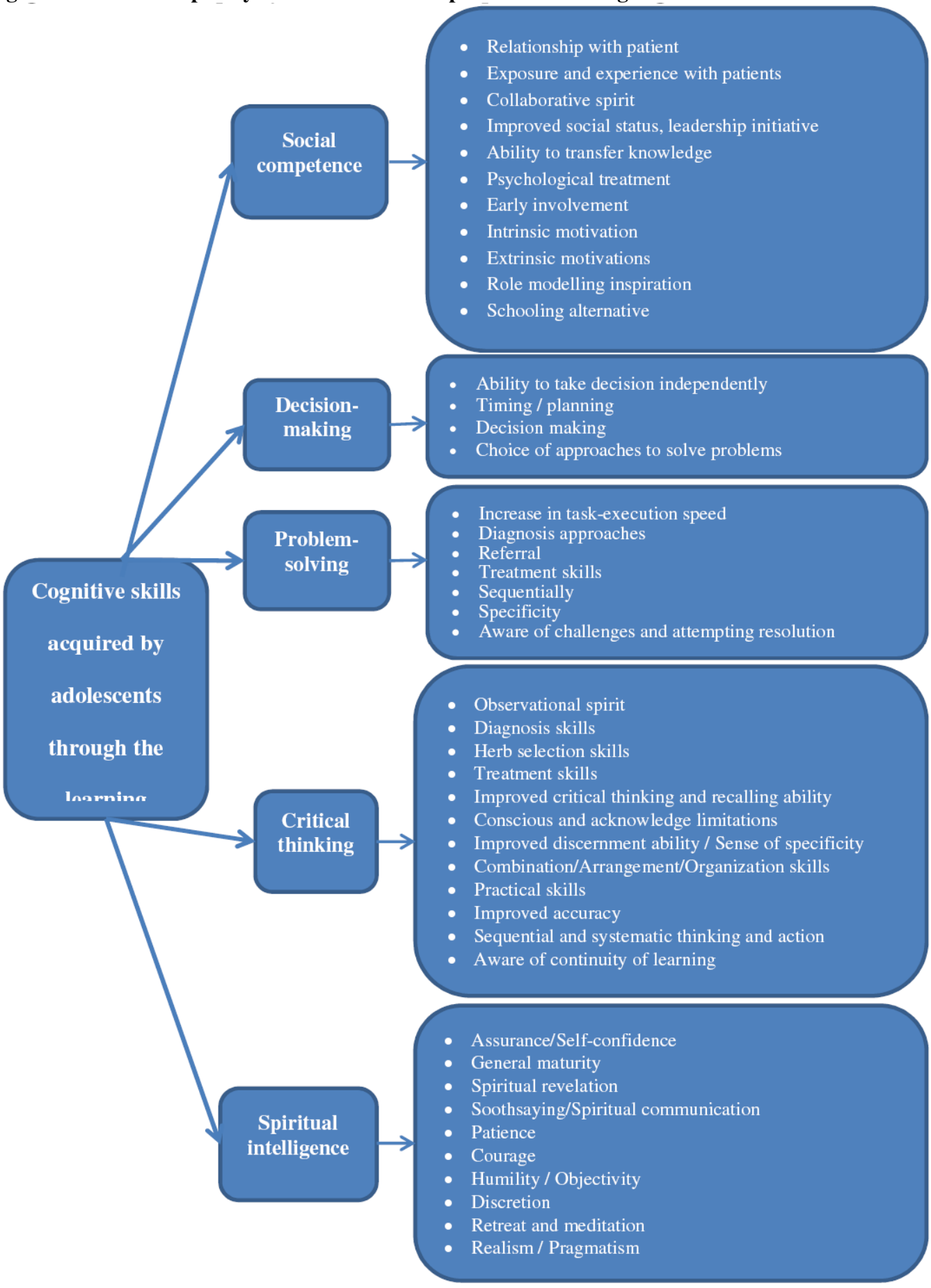

Figure 3: Cognitive skills developed by adolescents in their process of learning traditional medicine

Figure 2 depicts that cognitive skills that impact the development of adolescents' cognitive skills were grouped into five categories, namely social competence, decision making, problem solving, critical thinking and spiritual intelligence and which were acquired by the adolescents as presented on figure 3.

Social competence

Treatment scope and outcome as traditional doctors were particularly concerned with treatment outcome. Some believe that patients with low conviction in traditional medicine might not get satisfactory outcome "*Some go taking other medicines and so by the time they come, they have lost hope already*". In the other sense, they perceived that the outcome of treatment was also determined by the trust people had in traditional medicine or the work they are doing. The positive outcome of treatment is source of motivation and satisfaction ("*With the many people who are cured I am very satisfied that I am able to help them"; "I am very happy and satisfied with what I am doing. The fact that I am able to treat people and see about 75% cured I am happy that with the herbs given by God I am able to bring healing to people*"); Solidarity, flexible and affordable mode of payment, The fact that the traditional doctors treat everybody without discrimination, irrespective of their ability to pay as clarified by this quotation ("*Not everybody can provide the things needed for treatment. For those who do not have the things needed, I treat them. I believe God will always provide*"). The sense of solidarity was expressed on this line, and was extended to using resources from an affordable patient to help those that could not afford as explained by this traditional doctor ("*there are volunteers. If someone comes without them, I look for the things. When some people come for treatment, they are aware that there are some people who do not have these things. Some at times they bring extra. And at times I have some of them which I use for those who do not have. But I treat all who come whether they have the things or not*"). Patients are also given the opportunity to pay after cure. Relating with patients was another manifestation of social competence as it was good to have a peaceful relationship with patient ("*I am gentle, calm*". Appreciations from patients was highly perceived as a reward "*Many when they have been healed always come back to appreciate and they bring many things which I then use to assist those who may not have*". Some are) even allowed to pay after cure as depicted by this quotation ("*I am a member of the common wealth traditional doctors.' I treat you, when you are already healthy then you can come and pay or bring what you have*"); communication, counselling and relation with patients was emphasized upon, given that adolescents need communication skill to understand sundry patients' problems and this skill was improved upon as they could communicate better ("*I am able to communicate better"; "I can communicate better with patients*"). Counselling skill was also developed, that is the ability to counsel, how and when to counsel ("*You must judge when you have to counsel the person. Some of them are afraid of medications*"). Adolescents had to develop psychological knowledge to understand patience and relate with them better ("*How they behave when they take them and which medicines to give them when they are behaving a type*"; "*You must learn to know those who are strong and how to treat them and those that cannot withstand treatment*"); parental influence and initiation, as some of them were inspired by their parents that equally serve as role model ("*I enjoy the traditional medicine. I love it. My mother used to practice it so I really like it*"; "*my father showed me when I was still young*"; "*he and some other doctors helped to teach me other skills in traditional medicine*"); early detection and involvement of talent, initiation age and duration, predisposed potential. As earlier explained, involvement at early aged was an asset for the development of skills or acquisition of knowledge, for a strong interest and also for purity required for some initiative rites ("*I started traditional medicine when I was a child and I stopped school to learn it.so I really love it*), the starting ages ranged from 7 to 12 years and was summarized by a traditional doctor as the age where the child starts reasoning. Traditional doctors teach adolescents with observed predisposed potential to become a traditional doctor *("yes I teach adolescents but not all"; "So those I feel those that are called"*). Some children are born traditional doctor and start practicing without any training (*"Some persons are born with the spirit of traditional medicine so they do not really need any age before they start learning. These kind of people just begin to practice")*; physical power induction as the transfer of skill could be done through physical power induction whereby someone through physical contact transfer the power and skills to the child ("*When I was born my grandfather who was a traditional healer visited our home and after naming me he gave me a leaf. As I grew up I found myself performing traditional healing*"). Most traditional doctors receive their teaching from other traditional doctors and are also inclined toward ensuring continuity of traditional medicine whereby motivation for the transfer of knowledge was more to ensure the continuity of traditional medicine, to sustain traditional medicine ("*people have to continue this work so I teach young people so that they can do it when I am no longer there*"); small class size as it was perceived that it can foster the acquisition of knowledge as traditional doctors teach mostly one or two people at a time *("Two children are taught at a time"*), formal and informal learners; sex and age consideration; in some instances, initiation was not sex-related as both male and female adolescents were

given the opportunity to learn ("*My father taught everyone both girls and boys so I teach everyone*"). However, sex was considered in the process of initiation. There are some problems where the girl is more concern with and some that the boy is more concern with and this is considered in the training or initiation process ("*There are some for girls and some for boys. So you cannot mix them*"). It was emphasized that it is a traditional norm that male and female should not be given equal opportunity or consideration ("*the male children take pride of place according to our traditions and customs*") and parents also transferred this norm to children ("*Our father gave us equal opportunities. He taught us so that wherever anybody is he or she will be able to take care of oneself. Some of my sisters too are traditional doctors*"); quarantine, confinement, isolation and restrictions were also employed in some specific cases. Traditional norms like selflessness and righteousness were respected, confirmation ceremony whereby at the end of the training period there is a confirmation ceremony during which the adolescent or learner is confirmed as a traditional doctor. Some secrets are revealed during the special occasion and some power induced *"before graduation the child is officially inducted in a ceremony when all things that have not been taught are now shown"*; professional collaboration with modern and traditional practitioners. Collaborative mind was also should work with other traditional doctors or conventional doctors to overcome challenges ("*Also when I am alone and my master is not there I know those I have to send to the hospital or another doctor*"); collaborative strategies, collaborative spirit, that is improved relation with other traditional doctors (collaboration with other traditional doctors, that is combined effort from professionals to address some issues, collaboration with conventional health care system); the influence of social environment as the social environment was an asset in the transfer and acquisition of knowledge since traditional medicine is been practiced in the surroundings and children are exposed to it earlier.

On the part of the adolescents, the social competence skills acquired ranged from patient relationship (communication skills, counselling skills); exposure and experience with patients as exposure has helped enormously in the development of their critical thinking ("*Because every day I am meeting new patients, it has helped me to think better*"). Adolescents employed various diagnosis approaches; collaborative spirit; improved social status and leadership initiative as adolescents have understood personality development through acquisition of knowledge and skills as they quickly perceived that their social status has improved as they are more respected in the society ("*I am respected in the village*"). This prompted their participation in decision-making in the community ("*At times they ask me to say what I think about various things*"); ability to transfer knowledge as adolescents can now transfer knowledge, can now teach other people traditional medicine ("*I am also teaching other people now how to do it*"); psychological treatment; early involvement; intrinsic motivation (passion), which passion is an asset for perfectionism and professional development and adolescents have developed this quality ("*I love it very much. That is what I do. So I really love it*"); extrinsic motivations (food as driving interest factor), as food and drinks always available at the traditional doctor place also make adolescent to develop interest in staying in the environment and learning ("*I love it very much also because of the food and drink every time"; "Because every time we eat and drink*"); parental inspiration; and schooling alternative, whereby traditional medicine was perceived as alternative to modern school ("*I love it very much. Since I was not able to go to secondary school and I began learning a trade and also traditional medicine. I think this is my life. So I am happy doing it*").

Decision making

Specialization, as traditional doctors are specialized for efficiency, since they believe that they cannot handle all the cases ("*We are specialized in various areas*").

Control / confirmation of sickness and treatment outcome, Traditional doctors resort to hospital equipped to help control or help verify the outcome of treatment since they did not have the necessary equipment ("*I also send those who have been treated back to the hospital for scanning so that their treatment can be ascertained*"); timing / planning; adolescents have improved in relating schedule to activities and respecting it and in the sequential organization of task ("*when I should add salt, honey or palm wine"; "When to add more fire or reduce it*").

On the part of the adolescents, the decision-making skills acquired were ability to take decision independently, Adolescent can now practicing independently, take decision on what to do and not to do ("*My daily experience of treating people in my own place now has really helped me*"; "*Using the traditional perfume I see certain things*") Parents also observed that their children can decide better as depicted by this quotation ("*He is able to make good decisions*"), timing, overall decision making ability and choice of approaches to solve problems. Parents

observed this improvement in decision-making ability of their children ("*He has learned to solve problem*s").

Problem solving

Affordability of treatment, as various ways are used to make treatment affordable, like solidarity to improve access to treatment, making patients to pay in cash or in nature, or surplus from other clients used to treat others, were approaches to solve the problem of lack of material or unsolvable patients.

Exposure to diversified skills and treatment approaches and practical intelligence was the most used teaching method. Children are assignment for practical learning as depicted by these statements (*"when you take them to the forest and harvest the grass with them, then you send them on their own. They go and harvest, you repeat the process and with constancy they get it"; "when he does it like five to ten times and he sees that it has worked, it has cured the person, he will have mastered in it")*; continuous learning as emphasized by this quotation ("*I started when I was still young. Now I have learned much but I am still learning. So you cannot really say this is how long you have to learn. Even you have graduated you cannot say you know everything, you have to keep learning*"); specificity of actions and processes by relating treatment to age, sex, pregnancy status, patients condition, type of problems. Herbs are found in different location and are harvested at different time. The preparation and conservation processes are also specific, even the dosage which is also related to patients and disease condition.

Collaborative strategies as they collaborate with other traditional doctors and the conventional health system ("*If the person has visited the hospital and the diagnosis has been done, that helps me because the illness has been identified*"; "*Firstly I send the person to the hospital to do laboratory diagnosis*"; *Cases I know I cannot treat I refer them to other doctors*"; "*Yes. we work together. I refer patients to them and they also refer patients to me*"); sequentially / systematically, in the order of putting thing together to make a medicine or achieve as treatment "*Yes. There at every time I am making a decision: When I should add salt, honey or palm wine or add more water to medication I am preparing*"). Combined efforts from professional, collaboration with assistants and trainees ("*So in some cases I invite other doctors for those that you cannot prepare alone*"); specificity as some problems are handled by the traditional doctor alone ("*Some you do alone*"). On the part of the adolescents, the problem-solving skills acquired ranged from increase in task-execution speed as adolescents perceived an improvement in their task execution speed ("*A lot has changed. My speed has increased*"); diagnosis approaches as they can now employ a diversity of diagnosis approach to sort out patients' problems, ranging from observation, soothsaying, questioning; referral, as they have understood the importance of collaborative work, have to decide timely when to refer to the mentor "*I have to also decide whether I should refer the person to the Pa who taught me traditional medicine or I should manage the situation myself*"; treatment skills, sequential approach, and awareness of challenges and attempting resolution were other problem-solving skills acquired by the adolescents.

Critical thinking

Diversified diagnosis approaches like diagnosis through observation, traditional diagnosis through soothsaying or sorcery, diagnosis through questioning, temperature through touching or the use of modern equipment. Diagnosis was done through observation as explained by these quotations "*I look at the eyes, hair, finger nails, all over the body if the illness is hiding somewhere in the body of the person*" "*But if the problem is natural which you cannot see through divination you see a sign from the person's physical characteristics like yellow eyes, pimples, rashes, etc.*"), they also employed traditional diagnosis approach, questioning ("*I ask how the person feels and also I ask for the symptoms of the illness*"), temperature was gauged through touching or using a thermometer ("*I use my hand to know a high temperature by placing my hand on your neck. At times I may even use a thermometer to know the temperature of the person*"); knowledge of illnesses for proper diagnosis was also emphasized "*You must know how to recognize the various illnesses*". Specificity of treatment (Treatment process specific to age, sex, sickness, patient attitude , type of medication, or pregnancy status). Discernment, Adolescents developed discernment ability in various aspect of treatment namely quality/type discernment which is the ability to differentiate and relate treatment to diseases ("*I have to decide the kind of treatment*"); quantification and time discernment, that is ability to determine the amount of ingredients in a whole, the posology ("*You must judge too the number of days you have to give the treatment*"; "*I have to choose how much to give them")*, location discernment, that is the ability to relate herbs to location *("I know where to look for them. I can also find them easily"*), and process discernment that is the ability to specify or relate process to objective or task, as corollary of sequential and systematic way of acting, and planning. Problems patients come with ranged from spiritual problems / attacks from witches and wizards, typhoid, headache, frontal headache,

gastric, pile, malaria, sexual weakness, pregnant women having difficulty giving birth, people who want to protect their things, bone problems, sprains, toothache, gonorrhoea, syphilis to sexually transmitted diseases. Material needed was specific to illnesses and ranged from palm wine, chicken, goats, honey, medicinal herbs, blood from animals, calabash, fufu corn and vegetable among others; material could be converted into cash. The critical-thinking skills acquired by the adolescents were observational spirit and practical skills as adolescents have also developed the ability to learn by practical intelligence through observation and practical "*I just observe what my master is doing. Most often he sends me to bring him the things he needs to use at every stage but it is not everything I can touch*". Critical observation was also emphasized upon, that is the ability to observe critically as to learn a process ("*You observe. You can also just see and know the kind of illness the person is sick of*", "*I think a lot. But I mostly observe because I am trying to understand what is happening*"); diagnosis skills as they have also improved on their ability to diagnose and detect illnesses, prerequisite for a positive treatment outcome ("*I can easily understand their problems*"); herb selection skills; treatment skills; improved critical thinking and recalling ability as adolescents are now conscious that sufficient thinking or exercising patience are necessary to take the wright decision (*"Very much. I am able to take my time now to think about various medicines and how they affect the patients"),* improved reasoning and recalling potential, sustained or constant critical thinking/recalling have fostered adolescents' critical thinking and recalling ability "*Every day as I go to select herbs I am constantly thinking to be sure it is the right one*"; "*You must think if you are going to make good medicine. It takes a lot of thinking because some illnesses have the same symptoms but they are different. You must know exactly what to add and what to subtract from the medicine*". Parents' viewpoints equally aligned with as depicted in their statements as some perceived that their children can remember better ("*They are able to remember*") and think better "*He thinks better now*"; "*He thinks and talks like a man*"; "*He reminds me if I have not yet taken my medicine*"); conscious and acknowledge limitation; improved discernment ability (quality, quantity, medicine, problems, patient's characteristics, herb type and location, herb preparation, harvesting time, treatment and diagnosis approaches, processes); sense of specificity, combination, arrangement and organization skills; practical skills; improved accuracy; sequential and systematic thinking and action. Their ability to think and work sequentially and systematically in order of putting thing together to make a medicine or achieve a task was also pointed out ("*when I should add salt, honey or palm wine"; "I think very much. Because I have to decide which kind of treatment. The things to add in the treatment and the quantity so it is all a thinking process*"; and awareness of continuity of learning.

Spiritual intelligence

Divination / Soothsaying / Incantation / Sorcery, spiritual teaching, communication with gods were exercised when faced with spiritual problems "*If it is spiritual you must consult the gods and then do incantations to remove curses and bring healing or do cleansing for the person*". Spiritual intelligence mostly in the frame of traditional diagnosis was quite emphasized upon. Divination / soothsaying which is a type of consultation by supernatural power was mentioned *("I use divination especially for cases of witchcraft"; "I look at the person, then I use divination. I use Kolanut peelings or cowries. I throw them on the ground to know the kind of illness the person is suffering from"; "I throw cowries to know what the person is suffering from. whether it is a serious illness or just some small thing"*), communication with gods *("I talk to the gods too and they tell me"*), dream / vision as some are inform through dreams / vision / revelation on potential illness or problem and on how they can be handled "*I don't have any book. When I sleep at night. I have a dream that this kind of patient will come. And then I see the various grasses to be used for that particular treatment. It comes like a vision or a dream*". Spiritual knowledge was mostly impacted by Gods / Ancestral call or revelation, as people can be born with potentials to be traditional doctors, that is they are endowed with redisposed potentials; secret societies given that with respect to spiritual competence, some traditional doctors did not train female since the initiation was linked to a secret society to which female cannot belong (*"I train mainly boys. For girls I just show them a few leaves but I associate more with men and boys than girls. Girls cannot belong to the various societies where I belong and so cannot exploit the spiritual powers which I have")*; spiritual teaching as some knowledge are acquired through revelation from gods and ancestors, libation and prayer; the sense of discretion was also inculcated in the adolescent as they are not supposed to share certain knowledge or secrets "*there are some times my teacher told me I don't have to talk to anyone so as to have the spiritual powers to deal with the patients*"; motivation / passion, selflessness, humility and self-confidence and parents or elders particularly emphasized on commitment

("*He must have faith in what he is doing*"), humility ("*He must believe it is a gift from God and not his own personal thing to show off*"), politeness ("*He has to be polite*"), selflessness with vision to help and not for profit or money ("*He must believe he is doing it for free and not for money*" "*You can take less and you can take nothing but you should not take more than what you gave in order to acquire the skills*") and self-confidence as one should be convinced of one's competence ("*My son now is convinced in preparing the medicine that the person who drinks it will be well and it happens*"). With respect to spiritual intelligence, adolescents developed the following skills; assurance / self-confidence or general maturity. Adolescents gradually became sure and confidence with their ability to do things, notably consulting and treating ("*Before I was confused when I saw a patient but now it is easy for me to handle them*"; "*I am able to do better now than when I started four years ago. I was just trying to see whether I could do it. But now I am good at it. I have become able to identify and treat illnesses. The common illnesses like headache, malaria, typhoid*"); General maturity, the perception that one is now matured based on the improvement in various skills and ability as well as social consideration ("*I am better now. I have grown mature now*"; "*I now behave like a mature man*"). Parents or elders also perceived maturity in reasoning and action, consciousness, sense of responsibility ("*He thinks and talks like a man. He speaks in proverbs*"; "*he has also become very conscious about medicine and many other things*"; "*He reminds me if I have not yet taken my medicine*"); spiritual revelation as the spirits can tell adolescents what to do ("*At times I don't even think. It is as if a spirit just tells me this is the grass*"); soothsaying, spiritual communication; patience as sufficient thinking/patience in thinking, that is thinking sufficiently or exercising patience to take the wright decision ("*Very much. I am able to take my time now to think about various medicines and how they affect the patients*"); adolescents also developed the sense of courage or the ability to overcome fear ("*I have seen some dying. I was very scared. But now I am no longer afraid*"); humility and sense of objectivity, the sense of discretion, retreat and mediation; realism and pragmatism, as some of them believe more in physical knowledge and practices which means they have developed the sense of realism and pragmatism ("*I am not very much into the spiritual things. I hope to learn with time but I have to think well before giving the treatment. Whether it will work. Whether it corresponds to the age of the child or person and how long they have to take it*"); The findings of this study show that African Traditional Medicine has existed from time immemorial and has been handed down by the ancestors. This is confirmed by Mahomoodally (2013), who makes it clear that it is evident that the use of medicinal plants as a fundamental component of the African traditional healthcare system is perhaps the oldest and the most assorted of all therapeutic systems. In many parts of rural Africa, traditional healers prescribing medicinal plants are the most easily accessible and affordable health resource available to the local community and at times the only therapy that subsists. The findings of their study suggested that the characteristics of traditional medicine are responding to community members' health, social and financial needs which are insufficiently met by the current conventional health services. Tan, Otake, Tamming. (2021) equally found that traditional medicine was used to deal with culture-specific illness – *uburozi*. To treat *uburozi*. This is vein with the findings of this study whereby traditional medicine was used to treat all sort of health problems indiscriminately including spiritual problems found in the community. However some cases were referred to conventional health system and vice versa and the conventional health's laboratory equipment were employed to support the diagnosis or to confirm the outcome of treatment. Referrals from hospitals to traditional healers took place spontaneously and informally and this was equally realized in Rwanda by Tan, Otake, Tamming. (2021). Patients also deliberately choose to resort to traditional medicine thus supporting the findings of Pan, Telles, Pathak, Shivangi, Nilkamal, Balkrishna (2014) whose findings shows that patients are able to choose between traditional medicine and conventional medicine and that the choice rests with the patients thus stressing the drive to integrate the two systems. Zank and Hanazaki (2017) equally dwelled on the coexistence of traditional medicine and biomedicine. The authors further explained that Medicinal plants are preferred to treat simpler health problems that do not require medical care, such as gastrointestinal problems, general pain, flues and colds, while the biomedicine is used principally for problems with blood pressure, general pains and endocrine and nutritional diseases. Traditional doctors in the context of this study highlighted their limitations in handling cases that required surgical intervention for instance. Diagnosis skills that impact the development of adolescents' cognitive skills ranged from social competence, decision making, problem solving, critical thinking and spiritual intelligence. The cognitive skills acquired by the adolescents also covered these five categories. The informal collaboration between traditional medicine and the conventional health system highlighted by the

various authors and this study has major drawbacks, as the referral might not be appropriate or done timely. This concern is highlighted by Asuzu, Akin-Odanye, Asuzu, (2019) who explained with respect to the specific case of cancer that there is a widely held view that a major cause of delay in diagnosis of cancer at an early stage in Africa is the fact that many patients consult traditional healers first and are often treated by them until curative treatment cannot be undertaken. However, this findings contrast with the trend of this study whereby traditional doctors often take upon them the initiative to refer patients to modern medicine or collaborate with other traditional doctors to handle some cases. The aspect of specialization was equally emphasized upon. In the other side, the inadequate and timely referral of patients to traditional doctors could be major cause of concern as well given that, generally, as explained by Pan,Telles, Pathak, Shivangi, Nilkamal, Balkrishna (2014), the decision to resort to traditional medicine was left to the patient, thus supporting the findings of this study. Eigenschink, Dearing and Dablander *(2020)* highlighted traditional consultation practices such as Qi, meridians, acupuncture, pulse and tongue diagnostics employed in Chinese traditional medicine. Though physical diagnosis based on observation, toughing and questioning was equally employed in this study, particular emphasis was placed on spiritual or metaphysical diagnosis using soothsaying, sorcery, incantation, communication with gods and ancestors, throwing of cowries and colanuts, translating into metaphysical messages, physical observation like how the head of the fowl falls after been cut, and in some circumstances, spiritual dream came in to help in identify the problem the patient is suffering from. The research work of Asuzu, Akin-Odanye, Asuzu, (2019) also mentioned spiritual problems like satanic attack as possible causes of cancer in their study, before stressing that such cases need the intervention of spiritual intelligence. The ability to identify and combine various herbs leads to the development of the decision making abilities. Also the selection of herbs which are illness related is also important in the process of the development of problem solving skills. Furthermore, the fact that these herbs have not been studied and documented leaves the people with a very limited number of herbs in an area covered by the Mount Oku with a large forest which presents a great potential as it has a huge reserve of diverse plants and consequently medicinal value. This coincides with the research of by Yazdanshenas, Mousav, Tavili, Shafeian (2016) where in Ghasem Abad rangeland, west of Isfahan province, Iran, more than 70% of total plants in this region belong to medicinal plants. Although, the local people recognize these kinds of plants; but they just consume only 35% of them. There are various medicinal plants in this area, and these medicinal plants belong to different families and life forms. On account of limited knowledge, the plants are underutilized and the environmental strength is not well utilized. A huge number of inhabitants of the Oku area according to our findings engage in African Traditional Medicine. The main reason being the accessible and affordable plants types present, thus making African Traditional Medicine serving as primary health care. This is economically and socially much more acceptable to the people as they prefer it to the conventional medicines which they consume when the traditional medicines are not available. This is supported by Ashwell, Stephen, Bhekumthetho, Moyo, Jerald Nair and Johannes (2013) who were of the opinion that traditional African Medicine's significance and impact on African continent is huge, with an estimated 80% of the population depending on it, and these medical practices are now referred to as complementary or alternative medicine for primary health care purposes. The reliance of such a large proportion of these populations on traditional medicine for primary health care needs has been attributed to a number of factors, including availability and accessibility, affordability, and extensive traditional knowledge and expertise within local communities. According to the findings, the practice of herb selection, the timing for the harvesting, the use of observation, taste, discerning, experience the teaching and other practices are critical in the development of the ability to think critically. The findings reveal that traditional medicines are harvested at night or in the early hours of the morning because of the nutrients' availability. The authors however argued that the absence of botanical knowledge and the chemical composition of these plants lead to more of guess work. But traditional doctors in this study might refute this assertion they claimed to know what the particular plants treat though unaware of the real chemical components. This calls for a more botanical approach to plant study rather than just its practical use for treatment based on inherited knowledge or spiritual ability to determine what each plant treats. This is in line with the description of Hussein and El-Anssary (2018) who discovered that Plant chemistry is the basis of the therapeutic uses of herbs. A good knowledge of the chemical composition of plants leads to a better understanding of its possible medicinal value. And an understanding of primary metabolites which include small molecules such as sugars, amino acids, tricarboxylic acids, or Krebs cycle intermediates, proteins, nucleic acids and

polysaccharides will give more meaning to the traditional practice of harvesting and determine when and where the herbs should be harvested. Engaging in the process of herb selection, identification and discrimination leads to the development of cognitive abilities as the findings show that the participants are able to develop the ability to recall, memorise, reproduce, think critically, utilize their spiritual powers in the process of identification and usage of the herbs as directed by the spirits. On the spiritual realm, the use of divination, dream revelation and spiritual powers which guide the process of herb selection or identification also enhance the development of spiritual intelligence which is a necessary component in the practice of African traditional medicine. LubnaAzmi, IlaShukla (2021 in analysing diagnosis and cure with the chief motive to present an outline about the use of plants for diagnosis and treatment of an ailment highlighted that phytotherapeutics came into the picture when cases of synthetic drug resistance started to surface thus substantiating the complementarity between traditional medicine and conventional health. The authors equally acknowledge that the medicines under synthetic drugs are usually a modification of a naturally occurring substance. The power of herbs in treating diseases as emphasized in this study is thus consolidated. Traditional doctors in the context of this study used various parts of herbs to treat illnesses, ranging from leaves, bark, root and even flowers employing different approaches in preparing the medicine. The high demand of diversified skills to prepare the medicines was stressed out by traditional doctors in the study. Children were supposed to be involved at early age to increase their chances to grasp the knowledge faster and accurately, which a proven natural predisposition and advantage at such age, and also, as explained by the traditional doctors, children are likely to be pure and more appropriate for some traditional initiation at such early age, ranging from 7 to 12 year as mentioned in the context of this study. Still in line with social competence skill, the extent of exposure determines the ability to acquire the skill, reason why adolescents under training spent their time with the traditional doctors and learn more through practical intelligence. The training duration could not be determined and it was mostly perceived not only as depending on the smartness of the learners but more as a continuous learning process. Collaboration among traditional doctors, close learning and child-specific pedagogic approach, and conservation techniques were problem-solving skills employed to improve on the quality of medicine, foster skill acquisition and improving on the conservation of medicine and the optimization of resources. The preparation of medicine was sickness-related, age related, depended on the conservation technique to be employed, the dosage, was procedural and systematic, demanded high coordination of tasks and processes, thus was highly demanding in critical thinking skills, the same as the training of the adolescents that as emphasized by the traditional doctor was essentially learner-centered. All these precautions could satisfied the concerns of Mensah et al (2019) who stressed that the dose received may be problematic due to either acute (short) or chronic (long-term) exposure. The preparation of some medicine required spiritual incantation or soothsaying thus making the spiritual teaching a prerequisite to capacitate the adolescents. Through this cascade processes of knowledge and skill transfer, adolescents acquires diversified cognitive skills ranging from social competence as they improved their social status and their ability to transfer knowledge, decision-making as they could plan and coordinate their activity better, problem solving as they became more systematic in their procedures, improved their skills / knowhow, improved their speed, improved their reasoning or critical thinking ability, were more accurate, systematic with higher sense of discernment, in line with critical thinking. Their spiritual intelligence was also boosted as they were more objective, show high sense of humility, self-confidence and maturity. The process of herb preparation was generally presented by traditional doctors as one of the critical and complex stage of training that demand enough exposure and skills, and even spiritual power in some cases. The aspect of dosage and specificity of medicine in term of preparation and treatment target as well as close follow up of patients were particularly emphasized by the traditional doctors thus containing the concerns of LubnaAzmi, IlaShukla (2021) whereby a close eye has to be kept on the side effects of traditional medicine. Mensah, Komlaga, Forkuo, Firempong, Anning and Dickson (2019) equally drew attention of the need to highly reckon with the toxicity and safety implications of herbal medicines. In the context of this study, traditional doctors were more confident as they used essentially herbs that have been earlier used with proven efficiency, though rigorous training and exposure was needed to acquire the knowledge and skills, which is in line with the perception of Mensah *et al*. (2019) who resolved that traditional medicine plants with toxic constituents are known and are avoided or used cautiously in herbal product formulations by traditional doctors. They further added that even if these are employed in medicinal products, they are employed below toxic levels and hence, if at all, hardly result in any fatality when

administered by professional practitioners or experienced persons, thus aligning with the question posology preparation technique specific to medicine emphasized in this study. The safety and efficiency of traditional medicine in the context of this study was explained by its survival and fast growing no matter the vast expansion of conventional health care system, the survival and the continuous used in the community, and the generally satisfactory treatment outcome, as well as the ability to handle spiritual cases. Oloyede, (2010) in this vein concluded that traditional medicine still remain the prevailign souce of healing in most parts of africa with an estimated 80% of peopple using them. Payment or treatment-reward mechanism was generally affordable as traditional medicine was more perceived by traditional doctors as a gift from god aimed at helping communities and not for profit. This stance match the context of poverty in which most African communities find themselves and which prompts them to resort to traditional medicine besides the proven efficiency over centuries as supported by the findings of Ashu and Naidoo (2016). The authors clarified that factors such as the lack of health care workers, inequalities in the health sector due to socio-cultural and socio-economic disparities prevent people from patronising both health care systems and this coupled with poverty to enhance the interest for traditional medicine. The authors acknowledged the efficiency of traditional medicine in primary health care but deplored the poor integration in the conventional health care system. In line with spiritual intelligence, Winkler, Mayer, Ombay, Mathias, Schmutzhard, Jilek-Aall (2010) examining African traditional medicine and Christian spiritual healing regarding treatment of epilepsy realized that various traditional healing methods were used including traditional herbal medicine, spiritual healing, scarification and spitting. This supports the findings of this study as traditional doctors used different treatment methods among which herbal medicine, spiritual approaches like soothsaying, libation, incantation or prayer or cut the skin to apply medicine. Isola, Omoleke and Ishaq (2013) pointed out dosage as issue with traditional medicine but this was particularly considered by traditional practitioners in the context of this study. Their assurance lied on the fact that these practices were ancestral and would not have been sustained if they did not prove their worth. These authors equally emphasized the need to improve on the collaboration between traditional medicine and the conventional health care, thus comforting the position of traditional doctors and elders in this study, who deplored the fact that this collaboration was still very informal. Traditional doctors in this study willingly referred some cases to hospitals and seek the help of hospital laboratory when necessary. In few instances, they acknowledged deliberate referral of patients to them by hospital and emphasized that patients often take upon themselves to come and see them when they are not satisfied with the outcome of treatment at the hospital. The efficiency of treatment with herbs highly applied in the context of this study was asserted by Grover *et al*. (2001) whose results indicate that plant extracts have the potential in the prevention of renal damage associated with diabetes. Laelago (2018) dwelled on the use of traditional medicine during pregnancy and sorted out both benefits and untoward effects. Traditional doctors in this study equally mentioned the used of traditional medicine on pregnant women but highlighted it as specific cases to which they provide specific approach and special attention. This sense of specific and discernment was highly expressed by adolescents under training in line with improvement in their cognitive skills. The various approach of traditional treatment employed in this study were also presented by (Tella, 1979) who explained that the components of traditional medicine include herbal medicine, therapeutic fasting and dieting, hydrotherapy, radiant healing therapy, venesection, surgery and bone-setting, spinal manipulation and massage, psychotherapy, therapeutic occultism, psychiatry and preventive medicine. Psychotherapy, spiritual healing through soothsaying and sorcery, bathing, massage or restrictions were presented in this study. Through the practice of herb selection, the timing for the harvesting, the use of observation, taste, discerning, experience the teaching and other practices are critical in the development of the ability to think critically. The findings reveal that traditional medicines are harvested at night or in the early hours of the morning because of the nutrients. The absence of botanical knowledge and the chemical composition of these plants lead to more of guess work. The indigenes know what the particular plants treat but they are unaware of the real chemical components. This calls for a more botanical approach to plant study rather than just its practical use for treatment based on inherited knowledge or spiritual ability to determine what each plant treats. In this vein, Hussein and El-Anssary (2018) explained that plant chemistry is the basis of the therapeutic uses of herbs before concluding that knowledge of the chemical composition of plants leads to a better understanding of its possible medicinal value.

General conclusion

The study aimed at investigating the role of African Traditional Medical Practices in the development of

Adolescent Cognitive skills in Oku Sub Division, North West Region of Cameroon. Traditional doctors and elders expressed high sense of confidence and trust into traditional medicine and the need to sustain this ancestral, traditional and cultural legacy. The development of cognitive skills by adolescents involved in traditional medicine was obvious and the improvement of their critical thinking ability, problem solving, sense of responsibility, maturity and spiritual intelligence, as well as social competence with improved communication skills, counselling ability, psychotherapy, collaborative spirit and selflessness among others were emphasized upon not only by traditional doctors and elders but by the adolescents themselves. Traditional doctors and parents highlighted the importance of early initiation whereby adolescents were involved in the training to become traditional doctor at the onset of reasoning age, 6 to 10 years in general. The class sizes were generally small, in average two trainees at the time. Skills were transferred essentially through observation and practical intelligence as the adolescents observed and practiced what was done by their masters following guidance and explanations they received in this highly interactive and practical training process. Practical exercises were given prime consideration as adolescents were constantly assigned to carry out specific task or to join their master in doing them. Moral and ethical teachings were emphasized upon as to align with the traditional perception of traditional medicine which is more to help the community than to make profit though token shall be paid in kind or in nature to help the traditional doctor meeting livelihood. Values like fairness, probity, collaborative spirit and objectivity were inculcated to the adolescents as core traditional values that equally catalyse the practice, survival and success of traditional medicine. The training involved not only the physical aspects but the spiritual dimension of traditional medicine as well. The fact that traditional medicine, considered as traditional or cultural values was sustained in the ecosystem where the adolescents are found, was an asset for the transfer of knowledge from generation and generation as adolescents already perceived it as an integrated component of their culture and life, which deliberately fosters their acceptance, interest and passion for traditional medicine. The zeal for traditional doctors to preserve this legacy was a major motivation for them to transfer knowledge to the new generation. Through long time practice, they established the importance of traditional medicine to their community and did not want the knowledge to get lost. Parents equally considered as elders in the context of this study equally emphasized the paramount role played by traditional medicine in the survival of their people and the need to sustain it through usage and transfer of knowledge from generation to generation. A historical view shows that a lot of practices within the African continent have enhanced the education of Africans and their cognitive development. According to Mosweunyane (2013), the infiltration of Western forces during colonialism facilitated the obtrusion of western knowledge systems into African societies, which undermined the essentiality of African indigenous knowledge systems and destroyed the zeal in Africans to ameliorate their systems. But on the other hand, there are sages in the indigenous communities who have never been to any classroom for formal education. These sages or wise people who have never had modern education manifest a wide range of cognitive skills like reasoning, thinking, decision making, problem solving, spiritual intelligence, emotional intelligence and social competence which they transferred to the new generation. The main pedagogical approach employed by traditional doctors were close teaching, exposure and practical and this coupled with the common practiced of traditional medicine in the surrounding and early exposure to role models to align with the Social Learning Theory by Albert Bandura (1977). Adolescent equally had passion in learning and practicing traditional medicine. Traditional medicine is now and integrated components of the tradition and culture in the sampled communities, thus the youth are naturally exposed, which will

deliberately foster their interest, transfer and acquisition of knowledge, thus supporting The Developmental Niche Theory. Many were inspired by their parents who were traditional doctors. The theory of social ontogenesis (Nsamenang, 1992, 2004, 2012) points out how, beginning early in life and through developmental stages, African children are active in the life of their families and societies as well as in self-care and self-learning. This theory presents human development as partly determined by the social ecology in which the development occurs. In the context of this study children were involved earlier in the initiation to become traditional doctors but at a reasoning age as explained by several traditional doctors.

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