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Revealing the popularity of traditional medicine in light of multiple recourses and outcome measurements from a user's perspective: a study from two regions in Ghana

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Revealing the popularity of traditional medicine in light of multiple recourses and outcome measurements from a user's perspective: a study from two regions in Ghana.

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Abstract

Traditional medicines (TM) are known to be popular in sub-Saharan Africa, where over 80% have reported its utilisation. It is claimed to be easily accessible, affordable, available and acceptable, but little is known about at which stage of treatment seeking individuals turn to traditional medicines. This is owing to a paucity in quantitative demand data on how many recourses of care people take for one episode of illness, whether individuals use traditional medicines as a secondary option to orthodox medicines, and if used, how satisfied they are with results. This study presents descriptive data from fieldwork carried out on 772 households in two regions of Ghana to ascertain actions taken for self reported episodes of acute and previously diagnosed chronic diseases. Quantitative results show by looking merely at first recourse, use of traditional medicines is fairly low, but once second recourses are accounted for there is a doubling and tripling of incidence of TM use for acute and chronic diseases respectively. A commonly used patient reported outcome measurement, the EQ5D, is adopted to measure satisfaction before and after traditional medicine use, to reveal significantly positive changes. The study suggests that whilst these results show individuals to be highly satisfied with TM, it is more often the second recourse of treatment with a revealed preference for orthodox medicines as a first recourse. This suggests that policy must investigate why individuals turn to TM only as a second recourse and clarify the insufficiencies of orthodox treatment. Policies which guide

individuals to taking the most efficient recourses for given symptoms and further exploration of key reasons behind high levels of satisfaction following utilization are encouraged.

1. Introduction

It is often cited that 80% of people living in sub Saharan Africa have previously used traditional medicines (TM) (WHO 2002:1). However, little is known about its popularity vis-à-vis 'modern' or orthodox medicines. Owing to a paucity of health seeking behaviour studies which examine multiple recourses and tangible outcome measurements, researchers and policymakers are left to guess that TM and related practices are at the very least reasonably popular especially amongst more rural populations with impeded access to formal health care, but they are unable to measure exactly how high the incidence, nor at which stage of treatment seeking individuals use traditional medicines. Indeed, the Ghana Health Service (GHS) promotes and encourages integration of TM and its practices with its orthodox system (MOHG 2004) but does so without solid documentation of basic demand side measures. Compared to many other sub Saharan African countries, Ghana's health service is relatively well developed, seeking to help the poorest through the National Health Insurance Scheme (NHIS) - based upon Britain's National Health Service – which reimburses public facilities for the cost of the most prevalent diseases such as malaria, hypertension and TB. In theory, this translates into little or no cost, at the point of consumption. In practice, affordability of medicines constitutes only one dimension oof an individuals' treatment seeking behaviour, with accessibility, acceptability and availability all recognised to be important additional contributors to utilization (Aday and Andersen 1974; UN Millennium Project 2005; Anyinam 1987; Mwabu 1986). Accessibility refers to geographic factors – for example, the time taken to reach the facility, whether transportation is available and opening hours of the facility. Acceptability describes cultural elements such as attitudes of

providers towards individuals (especially towards marginalized groups such as the poor, women, individuals with particular diseases) and whether the individual believes treatment will be effective. Availability refers mostly to the strength of supply side factors, such as whether stock-out durations are relatively short and the needed medicines are available in generic form. These four dimensions illustrate the complexity associated with treatment seeking behaviour especially in medically pluralistic settings in which multiple types of providers exist (Mwabu 1986), as is the case for Ghana (Twumasi 1979). Consequently, individuals with medicine needs potentially seek care from a wide range of providers.

The overarching aim of the study was to highlight empirically the sustained importance of TM for many individuals and their satisfaction before and after use. Patterns of traditional medicine use can only be fully understood and shown to be frequent by incorporating multiple recourses in analysis, especially where self medication and self prescribing are by far the most popular methods of dealing with symptoms (van den Boom et al 2004, Kroeger 1983, Brieger et al 2004). If one looks purely at first recourses, TM use seems to be relatively low (confirming that non TM, or orthodox, is often the first and more preferred method of medication). By expanding the analysis to look at multiple recourses and outcome measurements it is possible to paint a more holistic picture of health seeking behaviour, and to reveal the true popularity of traditional medicines. It is argued here that traditional medicines are well-liked and its satisfaction levels high because opportunity costs are low and benefits considerable. Many also believe TM to be safer, the more 'natural' option, and in line with causation beliefs (Mshana et al 2007) so 'there's no harm in trying' – at least in the short run. In the longer run, the effects of TM and its interaction effects with orthodox still remain untested or unknown, and users rely on anecdotal evidence regarding its effectiveness and safety.

2. Background

Traditional medicines and policy

Traditional medicine and healers are defined by the WHO 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.' (WHO 2011).

The integration of TM and its related practices with orthodox systems (the public, private not-for-profit, private-for-profit) has been endorsed as early as 1978, when the World Health Organisation officially recognized that many relied on TM owing to its relative accessibility, affordability, acceptability and availability (WHO 2002). Combining these two broad and often conflicting systems, however, has proved a great challenge in many countries. Orthodox personnel disregard traditional practitioners as untrained personnel who often trade informally without medical training and certification. Traditional practitioners often see orthodox practitioners as inpatient individuals who rush their patients in and out of their consultation rooms as soon as a diagnosis is made and a prescription given. Against this backdrop, countries have taken on the WHO recommendation to integrate the systems by developing national drugs policies and tweaking existing regulations to incorporate traditional medicines and encourage the cross fertilization of ideas. The Ghana National Drugs Policy stipulates; 'the role of traditional medicines and traditional medicine practitioners (TMP) in the health care delivery system is recognized and the Traditional and Alternative Medicines Directorate of the GHS has been established. Efforts are directed at bringing all traditional medicine practitioners under one national organization, preparing guidelines for standards of practice and ethics, and a training

manual for the profession' (MOHG 2004:8). However,this has resulted in a largely top down approach to policymaking, without much exploration or understanding of users' perspectives.

Choice of medicine providers

Within Ghana's medically pluralistic system (Tsey 1997), medicines can be obtained from an arrayof sources.The classification of providers varies across regions and districts but here, providers are classified into the orthodox (public and private), traditional (private only) and 'self' (medicines obtained at home, both traditional and orthodox). The orthodox system constitutes primary, secondary and tertiary institutions - some of which specialize (eg maternity homes) – in addition to informal services provided by drug peddlers. Formal institutions include the hospitals, health centres, community health posts, pharmacies and drug sellers, and clinics. All these listed institutions are required to be licensed, although enforcement is not necessarily strong or successful. The traditional system constitutes a wide range of providers and remedies which include herbal medicines, folk knowledge, rituals and spiritual elements (Tabi et al 2006). Practitioners may include traditional birth attendants, bonesetters, fetish priests, herbalist (non spiritual and spiritual), spiritual diviners, and the circumcisioner. To date, the traditional system is largely unlicensed and very few practitioners are authorised by the state as being qualified to practice officially, but by definition those in surrounding communities have given them recognition, though often only after many years of effective practice. Much like orthodox systems, the traditional practitioner specializes in specific diseases and illnesses, each with their diagnostic and treatment structures (Anyinam 1987, van den Boom et al 2004, Twumasi 1979). Compared to orthodox systems, however, there are spiritual elements that are little understood to those without detailed anthropologic knowledge of customs and rites, frequently local in nature (Mshana et al 2007). Conventional scientists and medical personnel fail to fully accept this

spiritual element and some also reject purely herbal remedies on account of their untested, hence unviable powers, to heal (see similar case in Sri Lanka, Sachs and Tomson 1992). Added to this the high propensity to self medicate (van den boom et al, Kroeger 1983) and the popularity of local pharmacies and medicine sellers (Smith 2004, van der Geest and Whyte 1988, Goodman et al 2007), and Ghanaians are faced with a complex web of possibilities when deciding what actions to take when illness strikes.

For many, traditional medicines and its practitioners are favoured for commonly cited factors related to accessibility, affordability, availability and acceptability (Anyinam 1987): herbal remedies grow in local areas or within the compound - in which case they are conveniently and freely accessed; they have been tried and tested by ancestors and locals alike and are often administered by those who live in the community (cultural path dependency); and are abundantly grown on fertile lands. A study undertaken on stroke patients in Tanzania shows that causation beliefs, such as supernatural causes for illness, outweighed other factors such as cost and geographic distance for care seekers, and multiple treatment seeking was the norm (Mshana et al 2007). Peltzer (2000) shows that in a community in South Africa, some individuals believed that doctors were able to make the illness better but could not necessarily 'treat the cause'. Thus, even if costs of orthodox treatment may be covered by NHIS, the preferred choice may be to obtain medicines additionally from traditional medicines/services of traditional medicine practitioners which can be acquired with even fewer barriers to access and are thought to be more acceptable, than using orthodox medications.

Multiple recourses of care

This vast range of possibilities regarding sources of care can complicate matters when looking at the numbers and choices of providers. The assumption that patients call at just one point of care does not necessarily hold especially where prescriptions specify treatment courses and initial medication does not cure existing symptoms. Thus, asking individuals simply where they *last* or *first* sought care phases out the possibility that many providers were used simultaneously or in sequence. This also applies where individuals may have tried self medication as a first recourse, thereby delaying seeking care from a professional source.

The importance of recognizing multiple recourses is paramount for both medical and economic reasons. Individuals practicing poly pharmacy may be at risk of dangerous drug interaction effects, and this is applicable for modern-modern, modern-traditional and traditional-traditional regime combinations. In the case of modern-modern interactions, information on this is commonly available from professional sources and on the whole warns of potential interaction and side effects. For interactions involving traditional medicines, however, there may be greater risk because most substances remain untested and unapproved. Moreover, traditional medicine practitioners are frequently untrained on potential toxicities. One study evaluating hypoxis and sutherlandia, both commonly used herbal remedies for HIV in Africa, cautions that active constituents of these medicines inhibit the efficacy of modern HIV drugs. Further, they increase viral resistance and the probability of drug toxicity (Mills et al 2005). Another outlines some potential problems for individuals with hypertension, diabetes and cancer (Winslow and Kroll 1998). Such dangers are arguably more hazardous as private actions of individuals are not always revealed to physicians,: Peltzer et al (2010) find that HIV patients in South Africa refrain from telling their doctors about TM consumption for fear of stigmatisation..Economically, individuals may be making irrational choices through repeat consumption when a single source

may have sufficed. This would be the case if inappropriate diagnoses are made by untrained providers, or individuals self medicate, as is particularly common in Ghana (van den Boom et al 2004)

In a study carried out in Ethiopia, Flatie et al (2009) find that although modern medicine is the preferred first choice, should medication prove ineffective individuals would turn to traditional healers. Some tried home remedies first, and strongly believed that modern medicines would not work at all for spiritual illnesses. Thus, there seems to be some evidence that both types of medicines are accepted by users but depending on the illness, people have a preference for which to use. Kroeger (1983) terms multiple treatment seeking as 'healer shopping', whereby people use multiple healers for one episode of illness, without referral from the first. This is often the case where barriers to access biomedical treatment are high (de-Graft Aikins 2005).

Satisfaction levels/outcome measures

Many studies fail to measure - in a tangible manner - user satisfaction. This is largely because most efforts to document effectiveness have been focused on scientific results to show herbal properties, rather than at user level. Of those which do ask, they seek to obtain an answer to the question, 'how satisfied were you with the service received', or 'how satisfied were you overall'. Although this assesses an outcome, it would be better complemented with measures incorporating a before and after effect to measure the *change* in satisfaction resulting from treatment and to avoid assuming that all individuals began at the same level or extent of health problem.

Stekelenburg et al's (2005:77) study in Zambia asked respondents about their opinions and perceptions of healer service satisfaction, although detail is omitted about the precise

methodology. The results show that 74% of respondents using traditional healers were satisfied with their treatment, but 86% of those who were not satisfied would opt for hospital treatment in the future.

To this end, the Euroqol 5 dimensions measure, EQ5D (Szende et al 2007) is widely acknowledged as a standardized outcome measure of orthodox medicines and health service use, asking individuals to self rate on a scale five aspects of health and overall quality of life and health before and after treatment/TM use. This instrument is a simple but concise way to rate user satisfaction and health related quality of life when combined with a corresponding question on overall satisfaction.

3. Methods

To better understand individual health seeking behaviour and their outcomes, a study consisting of 772 questionnaires at the household level (4713 individuals) in two regions of Ghana was carried out in late 2010. The regions, Greater Accra (GA) and Upper West (UW), were purposively chosen for their contrasting characteristics, and where applicable results for the two regions are presented separately. Greater Accra would be considered urban, cosmopolitan and well endowed in nature, whilst Upper West is situated in a remote corner of Ghana, isolated with many parts beyond the reach of government assistance. A standardized methodology for household selection from WHO was used as a foundation, which first randomly selects public reference facilities within region, and then clusters of households in specified radii are identified. For the study, the two regions were divided into four districts including the two district capitals. In each district the regional hospital (located in the district capital) was purposely chosen and three additional reference facilities were selected, resulting in 16 reference points. Care was

taken to ensure that no two selected facilities were located in the same neighbourhood. This was made possible by listing all facilities by district in Excel and applying the random number generator until facilities were spread over a mix of areas. From each reference facility, household clusters located within three specified radii were targeted for interviews. The first radius represented a geographic location of 0.5km-5km away from the reference facility. The second radius encircled households located 5-10km away, whilst the third radius equated a location of over 10km from the facility. All distances were measured using a Global Positioning System (GPS) and calculated in a straight line, as the crow flies. Outside the reference facility, a bottle was spun to determine the direction of travel. Researchers walked or were driven in this direction until they were within the specified radius, from where a random household was picked by looking amongst the most common type of housing in the area. This representative household is then labelled as the starting point, and a general rule of thumb was applied to select subsequent households. Households were: at least five apart; similar to the representative household; private, not public buildings; in separate compounds to obtain as diverse information as possible. If a household was empty or unavailable for interview at the time, researchers were instructed to return later. These rules were followed until the required number of households - approximately 16 per radius - were interviewed (resulting in roughly 48 households per reference facility).[1] Internally, all members who have been residing in the household in the past consecutive month (unless newborn) was included and a suitable respondent was picked to

[1] It must be noted that whilst the aim was to achieve an even spread of facilities and households within a given district, there is no guarantee of no overlap of facilities within a radius. Thus a household may have several facilities close by, particularly in more urban areas where facilities and people are more densely populated. However, reference facilities were seen as a starting point for sampling rather than a pure indicator of access, especially given that numerous other sources of care (including self medication at home, use of informal providers in the community and so on) were also available to individuals and therefore this was not seen as an impediment to sampling.

answer questions on behalf of the household[2]. This person fulfilled at least three of the following criteria: main health care decision maker most knowledgeable about health of household members; most knowledgeable about health expenditures of the household; most knowledgeable about health utilization by household members; designated care giver for sick household members.

Prior to the actual study a pilot was run, and ethical approval was sought from institutional affiliations in both England (London School of Economics, London) and Ghana (Kwame Nkrumah University of Science and Technology, Kumasi). All interviews were carried out by local research assistants, with prior training both in the classroom and on the field. Translations and back translations using local dialects (Ga and Twi in Greater Accra, Waale and Dagaare in Upper West) and English were made to ensure accuracy and consistency but ultimately answers were recorded in English. Coded data were then entered into Excel, checked for inconsistencies and then transferred to STATA for further cleaning and analysis. In addition to analysis of raw data which looks purely at individual behaviour within the sample population, weighted data are also presented for the number of recourses sought and changes in dimension scores (details of this can be found in the footnote of table 2b) in order to present a regional perspective.

Questionnaire

The questionnaire was formed of modules of the following parts: basic socioeconomic data of every member of the household; pregnancy module detailing all those who had used a traditional birth attendant for their last pregnancy issue/child birth; acute module for those with recent acute episodes; chronic module for those who had ever been diagnosed with a chronic illness and

[2] Additionally, where possible, the respondent in question was called upon to answer their individual modules

finally, a module gauging attitudes and beliefs about TM followed by the household's economic and social status. For the purposes of this paper, only the acute and chronic modules were chosen to be pooled for detailed analysis of traditional medicines/practitioner use. Both modules are analysed separately in the results section below.

Users of acute TMP services were asked to rate their satisfaction, choosing one from the following: very dissatisfied; dissatisfied; neutral; satisfied and very satisfied.

Individuals were then asked two broad questions plus 5 more detailed functionings related to everyday life, based on the EQ5D (Kind et al 1998). The first of the two broad questions how the individual rates *life prior* and *after* TM/TMP use on a scale of 0 to 10 where 0 indicates absolute dissatisfaction and 10 absolute satisfaction, whilst the second asks about overall *health prior* and *after* use. The difference in the before and after values are then calculated, with positive and negative scores indicating increases and decreases in well being, respectively. The EQ5D is a commonly used predictor of subjective well being and used for cost effectiveness analysis (Dolan et al, forthcoming), and is designed to cover as many health domains as efficiently as possible in a time/money pressured environment. These dimensions enquire about an individual's mobility; ability to self care; ability to carry out everyday chores and activities; level of pain and finally, anxiety and stress. In these five dimensions, individuals rate whether they have no problems, some problems or big problems (scaled 1, 2, and 3 respectively). Again, a before and after score is calculated, with positive values indicating positive changes, negative values negative changes and 0 denoting no change.

4. Results

Background data

Data from 387 households in Greater Accra and 385 households in Upper West were collated, with approximately the same number of households per radius, summing to 772 households consisting of 4713 individuals. Thus the mean number of individuals in a household was 6.1. This is in line with the figure in a similar report conducted recently for the entirety of Ghana, which found average household size to be 6 (WHO and MOHG 2009:13).[3] Households were larger and younger in the Upper West, where there were more children (average age of all individuals 24.8 vs 26.2). Household food and total expenditures tended to be higher in Greater Accra, where many were self employed/had their own business, as opposed to the Upper West where the majority were farmers and subsistence farming was common. 56.4% and 51.1% of individuals were female in Greater Accra and Upper West respectively. The main religion of those living in Greater Accra was Christianity, whereas those in Upper West mainly practiced Islam. Ethnicity was roughly divided into Ga/Dangbe in Greater Accra and Waale/Dagaare in Upper West. Table one outlines these sample characteristics.

Table 1 - characteristics of surveyed households

		Greater Accra	**Upper West**
Number of households sampled by radius	1 2 3	124 145 118	124 137 124
Sample size		1976	2737
Number of households		387	385
Average household size		1976/387=5.1	2737/386=7.1

[3]At the time of writing the most recent census figures (2010) were not yet available.

Average age	26.2	24.8
% females	56.4	51.1
% children (aged <18)	37.8	45.9
Average food expenditure in past week (cedi)[4]	69.9	28.2
Average total expenditure in past month (cedi)[5]	391.8	171.8
Religion (%)		
Christian	86.5	53.3
Muslim	6.6	40.1
Traditionalist/African or indigenous religion	0.4	3.1
Spiritual/African independent church	3.3	0.0
Combination	0.0	0.0
No religion/atheist	3.2	3.5
Other	0.0	0.0
Ethnicity (%)		
Akan	14.3	0.0
Ga/Dangbe	62.9	0.1
Ewe	15.3	0.0
Hausa	3.9	0.1
Dagbani	0.3	0.0
Nzema	0.1	0.0
Waale	0.0	33.0
Sissale	0.0	0.2
Dagaare	0.0	65.9
Other	3.3	0.7

**source: author's own*
**sample size as % of region: 0.05* (1976/4,281,137) *for Greater Accra, 0.41* (2737/671,043) *for Upper West*

Morbidity

Respondents were asked to recall any acute or chronic illnesses. The definitions and wording of both were taken from WHO approved/standardized questionnaires which have recently been used in Ghana (WHO and MOHG 2009) Acute illnesses aredefined as 'a condition that appears suddenly; the person did not have it immediately before becoming ill', and explained to be any

[4] Mean value, week before survey (1st week September in GA, 1st week October in UW)
[5] Mean value including food, month before survey (August in GA, September in UW)

disease or illness that starts suddenly and is short lived, which may dissipate with time without intervention. Classifications were double checked using some specific symptoms for all episodes experienced by household members in the previous two weeks. 9.8% of individuals reported having an acute illness (460/4713). The most common acute complaint was 'fever, headache and hot body' (334/460, or 72.6%), followed by 'pains and aches', (203/460, or 44.1%) and thirdly, 'diarrhoea, vomiting, nausea, could not eat' (163/460, or 35.4%). In many cases this was suspected to be symptoms related to malaria.

Similarly, respondents were asked, 'Has anyone in this household ever been told by a doctor or other health care provider that they have a chronic disease? A chronic disease is an illness that will not go away or takes a long time to go away, even when treated'. This question is designed to ascertain diagnoses made by both 'professional' and 'non professional' providers, thus includes traditional medicine practitioners and in the majority of cases individuals were able to name the illness immediately. 6.4% (301 cases) affirmed that they had a chronic disease. Of the named chronic diseases, hypertension or high blood pressure topped the list of chronic diseases with 77 episodes (25.6%), followed by arthritis or chronic body pain (61/301, or 20.3%) and ulcers or chronic stomach pain (46/301, or 15.3%). A combination of diseases, termed 'other', was also prominent, making up 49 disease episodes (16.3%). This included sickle cell, tumour/fibroid, chronic menstrual pains, hernia, 'spiritual illnesses' and skin conditions.

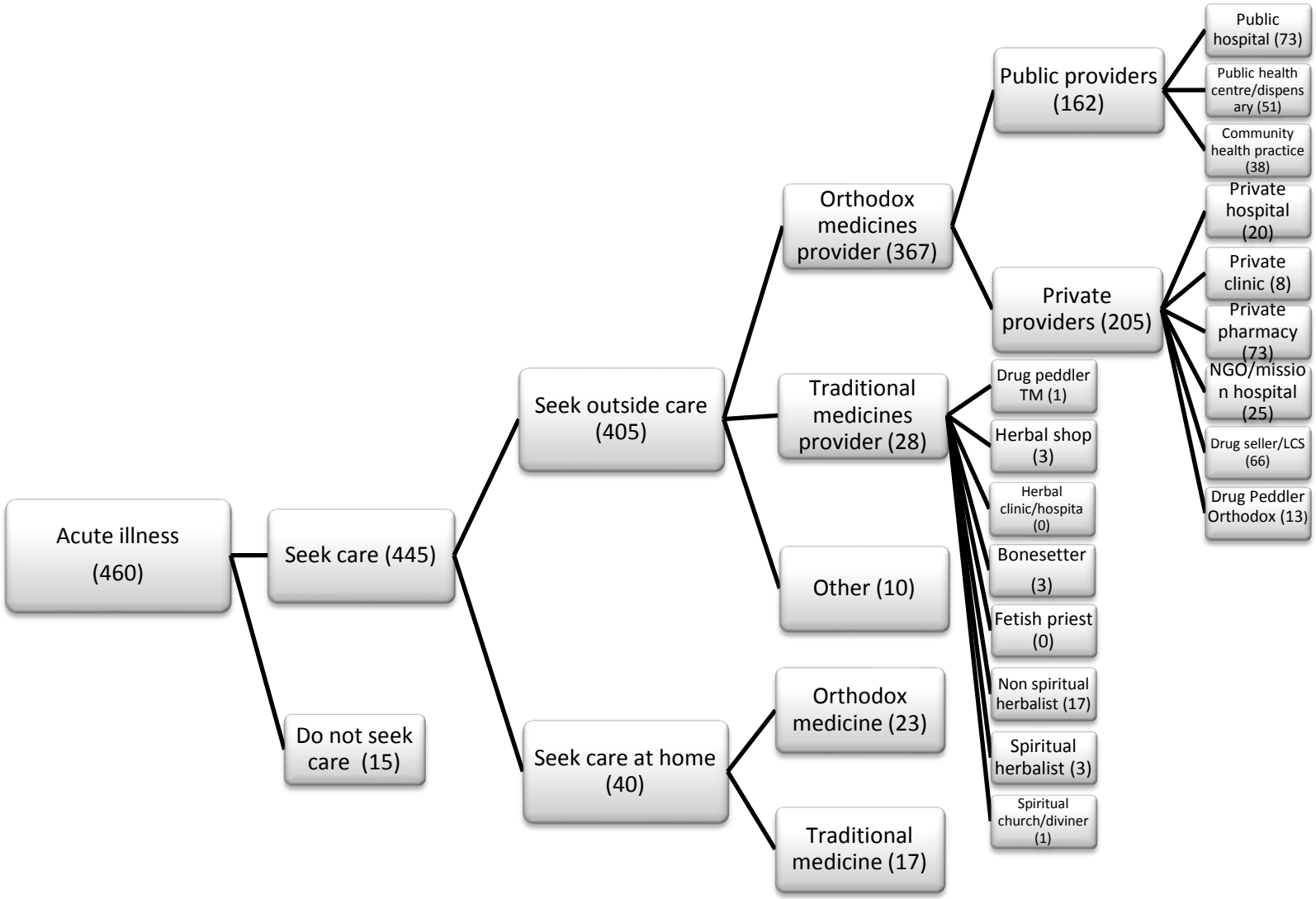
20 individuals were reported to have experienced an acute illness in the past two weeks in addition to coping with a chronic disease, whilst 3972 (84.3%) had neither type of illness.

Care seeking behaviour

First recourse - acute

Grouping all acute episodes together, there does not seem to be an association between perceived seriousness of illness and whether care was sought, with or without medical personnel. 41 of 460 cases (8.9%) sought no outside care. 15 (3.3%) sought no care whatsoever, citing reasons such as 'too expensive', 'care not wanted', 'does not trust providers of care', or 'there was no one at home to take me to seek care'. The remaining 40 (8.7%) who did not seek care outside the home chose to self medicate with medicines obtained within the household (23 with orthodox medicines, 17 with traditional medicines). 405 (88.0%) turned to health providers (both 'informal and 'formal') and of these, 367 (79.8%) went to an orthodox medicines provider (termed here as 'public' or 'private' providers specializing in medicines and/or healthcare provision, whilst 28 used TM providers. 10 bought medicines from other unofficial medicines vendors such as a provisions shop, or neighbour. In sum, orthodox medicines was utilized by 400 individuals (representing 90% of those who took medicines) whereas TM were used by 45 (representing 10% of those who took medicines) individuals as a first recourse.

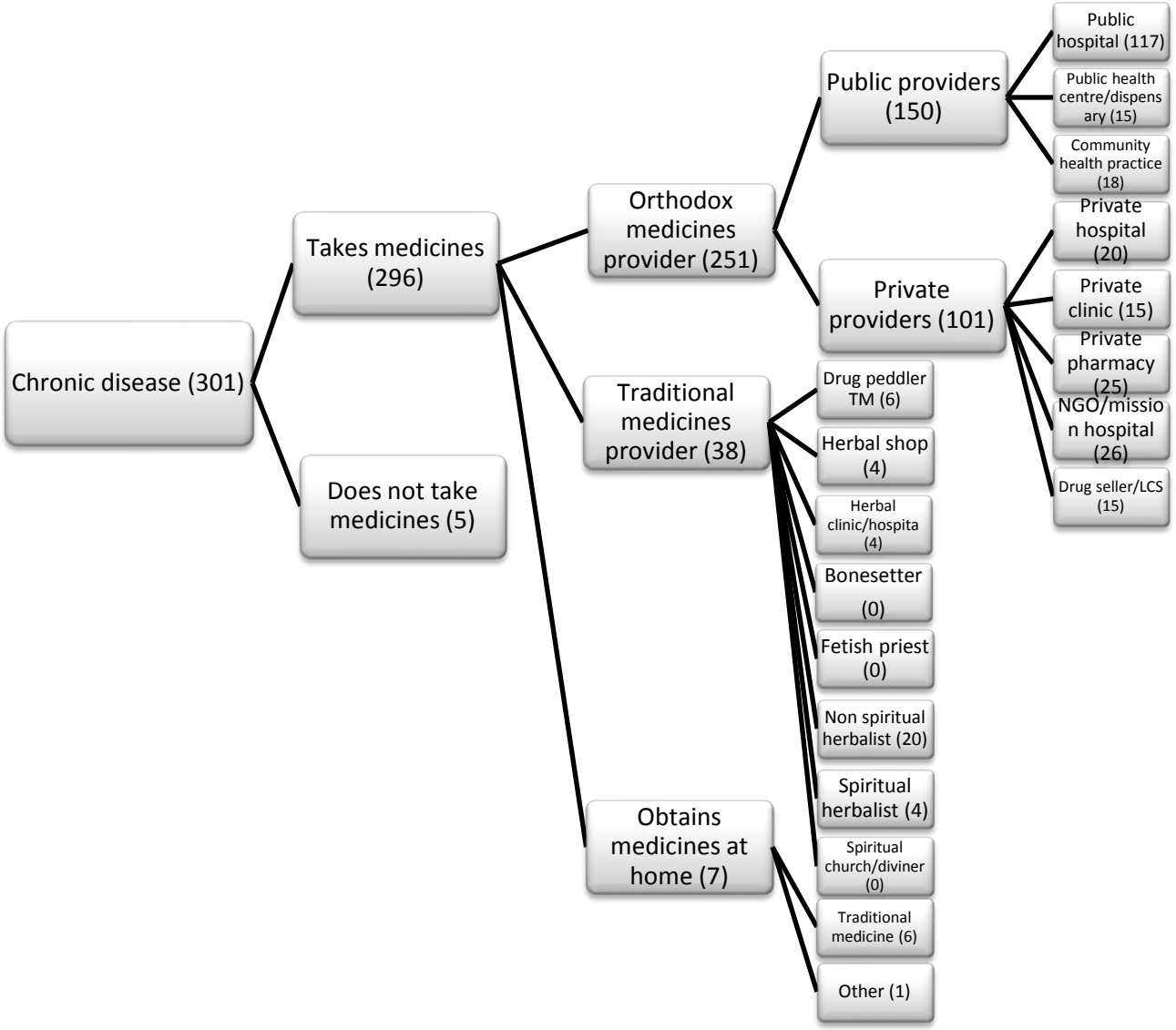
Figure 1- first recourses taken, acute illness


Acute illness (460)
Seek care (445)
Do not seek care (15)
Seek outside care (405)
Seek care at home (40)
Orthodox medicines provider (367)
Traditional medicines provider (28)
Other (10)
Orthodox medicine (23)
Traditional medicine (17)
Public providers (162)
Private providers (205)
Public hospital (73)
Public health centre/dispensary (51)
Community health practice (38)
Private hospital (20)
Private clinic (8)
Private pharmacy (73)
NGO/mission hospital (25)
Drug seller/LCS (66)
Drug Peddler Orthodox (13)
Drug peddler TM (1)
Herbal shop (3)
Herbal clinic/hospita (0)
Bonesetter (3)
Fetish priest (0)
Non spiritual herbalist (17)
Spiritual herbalist (3)
Spiritual church/diviner (1)

First recourse - chronic

Turning to chronic diseases, only 5 of 301 (1.7%) individuals had not obtained medicines from outside home in the past month to treat their diseases. Reasons cited for not taking medicines as recommended included: 'symptoms have got better'; 'care has been available at home' (stock of medicines available at home and alternatives cost too much/are too far/are a time burden); and that 'there was nobody at home to accompany the sick person to a provider/to obtain medicines'. The remaining 296 obtained medicines as follows: 251 (83.4%) from orthodox providers; 38 (12.6%) from traditional providers; 6 (2%) found medicines at home ("self medicate"); and 1 sourced medicine elsewhere. Figures for obtaining medicines at home (without outside care) were much lower for chronic than acute illnesses, but those who did self medicate, of most part, utilised TM (6 out of 7 cases).

Figure 2 - first recourses taken, chronic illness


Chronic disease (301)
Takes medicines (296)
Does not take medicines (5)
Orthodox medicines provider (251)
Traditional medicines provider (38)
Obtains medicines at home (7)
Public providers (150)
Private providers (101)
Public hospital (117)
Public health centre/dispensary (15)
Community health practice (18)
Private hospital (20)
Private clinic (15)
Private pharmacy (25)
NGO/mission hospital (26)
Drug seller/LCS (15)
Drug peddler TM (6)
Herbal shop (4)
Herbal clinic/hospita (4)
Bonesetter (0)
Fetish priest (0)
Non spiritual herbalist (20)
Spiritual herbalist (4)
Spiritual church/diviner (0)
Traditional medicine (6)
Other (1)

Multiple recourses of care

Incidence of TM/TMP use changes dramatically when incorporating multiple recourses of care.

Table 2a - total number of recourses sought by acute and chronic illness and region, unweighted

	Number of recourses sought total																		
	with needs	0	%	1+ inc SM	%	1+ exc SM	%	2+ inc SM	%	2+ ex SM	%	3+ inc SM	%	3+ ex SM	%	4+ inc SM	%	4+ ex SM	%
ACUTE																			
GA	185	2	1.1	183	98.9	160	86.5	41	22.2	32	17.3	5	2.7	5	2.7	0	0.0	0	0.0
UW	275	13	4.7	262	95.3	245	89.1	80	29.1	61	22.2	8	2.9	8	2.9	2	0.7	2	0.7
Total	**460**	**15**	**3.3**	**445**	**96.7**	**405**	**88.0**	**121**	**26.3**	**93**	**20.2**	**13**	**2.8**	**13**	**2.8**	**2**	**0.4**	**2**	**0.4**
CHRONIC																			
GA	178	1	0.6	177	99.4	172	96.6	63	35.4	41	23.0	8	4.5	8	4.5	0	0.0	0	0.0
UW	123	4	3.3	119	96.7	118	95.9	76	61.8	80	65.0	33	26.8	32	26.0	5	4.1	5	4.1
Total	**301**	**5**	**1.7**	**296**	**98.3**	**290**	**96.3**	**139**	**46.2**	**121**	**40.2**	**41**	**13.6**	**40**	**13.3**	**5**	**1.7**	**5**	**1.7**

**source: author's own*
** SM indicates self medication, percentages given as proportion of row total*

The table above shows a breakdown of the number of recourses sought by region and pooled. Data are unweighted[6] and percentages (of row total) are given in the column immediately to the right for ease of comparison. In 445/460 (96.7%) acute cases, individuals chose at least one source of care, 121 (26.3%) chose at least two providers, 13 (2.8%) turned to three different sources and 2 (0.4%) received a fourth line of care. Individuals were more likely to seek

[6] Table 2b in the appendix shows weighted data which do not change the main result of the study, as the percentages of individuals using certain numbers of recourses do not differ significantly. For example, the majority of individuals still use at least one source of care, there is a greater likelihood of using multiple sources when suffering from chronic illnesses, and almost nobody uses more than three sources. When the data is broken down by region, the proportion of people expected to utilise different numbers of recourse remains fairly steady, although raw counts change according to the assigned weight.

multiple providers when faced with chronic illnesses, with 41 (13.6%) people seeking at least three sources. Splitting the sample by region, more individuals in GA than UW used at least one source of care (as opposed to at least two, three or four sources) for both acute and chronic illnesses. Consequently, a larger proportion of those with needs in Upper West used 2+ recourses versus those with needs in GA. Figures excluding self medication are also given.

Individuals were questioned on whether any of the sources sought were the provider located nearest to their household. In over half of the cases, the provider to which they turned was not, offering evidence of multiple by-passing behaviour (even many second, third and fourth choices were to not attend the nearest source of care).

When allowing for multiple recourses, 103 out of 460 cases, representing 22.4% of all acute cases, used TM and related practices. The numbers for chronic diseases were even greater, with 129/301 cases, representing 42.9%, experimenting with traditional medicines. These figures compare to that previously given (45/460 and 43/301). In sum, including multiple recourses in analysis more than doubles and triples the incidence of TM/TMP in acute and chronic cases respectively. This also suggests that traditional medicine use is not often the first source to which individuals turn, leaving this option as second, third or fourth choices.

The majority of patients who visited healers were offered herbal medicines without rituals, although in a few cases (14 in total, 1.8%), TMPs used animals or animal parts/blood in meditation and cantations. In these cases, chicken or fowl was ritualistically killed whilst prayers are spoken, and their blood sprinkled on herbs or boiled in water before consumption by either the patient and/or herbalist.

Satisfaction levels/outcome measures

Acute

In response to the question asking users of TM/TMP services to rate their satisfaction, 76.7% were satisfied or very satisfied with the effects of treatment. 15% felt neutral, whilst the remainder was dissatisfied. Those pleased with results claimed that herbal treatments cured them of symptoms previously experienced, with many being able to return to their daily activities very soon after use of medicines. Individuals who were dissatisfied remarked that symptoms were still present, that they still felt the pains and that although at times the pains were relieved, sickness sometimes recurs.

When before and after satisfaction scores were asked for on a numeric scale, the median value for differences in health scores was +5 and the mode +6. Differences in life scores were calculated as: median +5, mode +5. Results for the five dimensions are given in table 3, and show only 3 cases where conditions worsened, with the remaining 100 cases all reporting either no change or at least a small positive change.

Chronic

61.2% of respondents were satisfied or very satisfied following TM/TMP use for chronic illness. Another 24% were neutral about its effects, whilst 19 (14.7%) were dissatisfied or very dissatisfied. It was often the case that users of TM/TMP were on multiple sources of medication and had tried TM/TMP either as a last resort, or 'just in case' it would produce good results. Most users felt pains reduced, their movement was much improved and daily chores were no longer causing them problems. Those who were dissatisfied were disappointed with recurring symptoms, and general inefficacy of the herbal product. However, believers of TM/TMP were

strong advocates for its effectiveness and 'reliability', claiming that it had better results than prescribed orthodox medicines.

The median value for differences in health scores was +5 and mode, +5. Differences in life scores were: median +4, mode +5. A handful of cases reported negative outcomes but as with acute cases, most respondents were pleased with the effects of traditional medicine.

In sum, in both acute and chronic categories, very few experienced a worsening in any of the five dimensions (indicated by a negative change, see table 3a[7]). There were more incidents of no changes, but the majority indicated small or larger improvements in condition following traditional treatment. Percentage scores of the totals are given in the column immediately to the right of count figures.

Table 3a - changes in dimension, by type of illness, unweighted

Unweighted changes in dimension						
Mobility	acute+chronic	%	acute	%	chronic	%
-2	2	0.9	0	0.0	2	1.5
-1	1	0.4	0	0.0	1	0.8
0	88	38.1	43	40.2	48	36.6
1	100	43.3	44	41.1	60	45.8
2	40	17.3	20	18.7	20	15.3
Total	231	100	107	100	131	100
Self care	acute+chronic	%	acute	%	chronic	%
-2	2	0.9	0	0.0	2	1.5
-1	1	0.4	0	0.0	1	0.8
0	89	38.5	43	40.2	49	37.4
1	101	43.7	46	43.0	57	43.5

[7] A weighted version of the table is given in appendix table 3b using the same weights as table 2b. Again, the general trend remains unchanged, with a large majority of people reporting high satisfaction scores, with many positive, and very few negative changes, indicated.

2	38	16.5	18	16.8	22	16.8
Total	231	100	107	100	131	100
Activities	acute+chronic	%	acute	%	chronic	%
-2	2	0.9	1	0.9	1	0.8
-1	2	0.9	0	0.0	2	1.5
0	72	31.2	35	32.7	39	29.8
1	92	39.8	41	38.3	55	42.0
2	63	27.3	30	28.0	34	26.0
Total	231	100	107	100	131	100
Pain	acute+chronic	%	acute	%	chronic	%
-2	2	0.9	1	0.9	1	0.8
-1	2	0.9	0	0.0	2	1.5
0	43	18.6	16	15.0	27	20.6
1	101	43.7	50	46.7	55	42.0
2	83	35.9	40	37.4	46	35.1
Total	231	100	107	100	131	100
Anxiety	acute+chronic	%	acute	%	chronic	%
-2	2	0.9	0	0.0	2	1.5
-1	3	1.3	1	0.9	2	1.5
0	76	33.0	37	34.6	41	31.5
1	114	49.6	51	47.7	67	51.5
2	35	15.2	18	16.8	18	13.8
Total	230	100	107	100	130	100

5. Limitations

This study has relied on individuals' full recall and revelation of treatment seeking behaviour. By using self reported health for acute illnesses, the study may have under reported incidences if an individual had 'normalised' an illness. For example because malaria is so common, they may not see it necessarily as something to report in particular, but a part of 'everyday life'. However,in the context of a household survey subjective reporting of illness does not seem an unreasonable wayto elicit answers, if only because it is impracticable to ask for written

confirmation or diagnoses especially when self medication is high (thus no professionals were called upon) and many people are illiterate and rely solely on verbal communication. When asking for satisfaction scores, the numbers line and the meaning of corresponding scores had to be explained in full detail. Thus, trying to objectify a somewhat subjective matter, at times, was difficult where respondents were not fully numerate. In this sense, the study would have benefited from some objective measurement (such as those introduced by Picker Institute (Sizmur and Redding 2009) as an additional proxy for patient satisfaction.. In the two regions surveyed, different research assistants were used which may have also obscured the results. However, the consistent scores across all EQ5D dimensions suggest that the overall picture from those using TM were similar, showing high levels of user outcomes. Overall, the study sought to be an exploratory study based on the sample population using pre-approved WHO methodology. The focus was therefore to investigate revealed individual preferences regarding health seeking behaviour rather than a region-wide analysis. In order to take the latter into account, however, weights were used and results presented as appropriate. However, it should be borne in mind that these weights rely on accurate data and are rudimentary in nature. As such, policymakers interested in the potential larger scale effects of multiple recourse seeking and changes in satisfaction should evaluate these numbers with caution. In so much as this study serves as initial evidence to inform general policymaking, it is hoped that this might be a small step towards fuelling more research in this area.

6. Discussion and conclusion

This study has sought to show that TM use and related practices are still very popular amongst Ghanaians according to user incidence and satisfaction levels. There is a shortage of demand side (household level) data in Ghana which looks at TM use as the focus has to date been entirely

on the supply side perspective (eg how to integrate traditional healers into orthodox systems). As such this study is a small step towards understanding individual behavioural reactions to illness and disease to fill this gap. By taking into account up to four recourses, the study considers health seeking behaviour as a chain of actions and reactions rather than a one shot decision and it was found that in many cases people feel it necessary to utilize two sources rather than just one. This is in line with Mshana et al (2007), who show that individuals often seek care from many sources. Multiple treatment seeking is particularly problematic in UW, pointing to deficiencies in the care system in this area of the country. Similarly, more remote areas (for instance, those living far away from health facilities) are perhaps less likely to seek professional care and therefore utilize TM. Such areas of Ghana are both frequently targeted and neglected; in this case, policies that address some unfulfilled needs or wants following the first recourse, including those in the orthodox system, would be highly beneficial. In line, policies that guide individuals to taking the most efficient and best recourse for given symptoms, such as basic education and information sessions, would also reduce the number of providers sought.

The finding that most people turn to TM only as a second recourse suggests that looking only at first choices is insufficient as the use of TM would remain hidden under such circumstances. By revealing second recourses, it more than doubles and triples the incidence of TM/TMP in acute and chronic cases respectively. This suggests that using TM is a second best choice to orthodox medicines, but similarly it is used because of low opportunity costs and the feeling that individuals have nothing to lose by trying it. Most finish their treatment seeking within two recourses, with very few looking for third or fourth lines of treatment. Delaying treatment seeking from professionals is thought to be common for those who have firstly tried self treatment, but is also the result of lack of basic knowledge and education in handling symptoms

(Meyer et al 2000) and can result in longer run health problems. One recommendation for policy, then, would be to consider and account for the fact that individuals are using multiple sources of care rather than merely assuming one source is used as is commonly done in household level surveys. Following this, policymakers would be able to question the reasons for using multiple sources - and in the revealed order - to better understand shortcomings within the system from the user's point of view.

The results suggest that individuals are engaging in polypharmacy by consuming multiple drug regimens. This potentially leads to dangerous side effects and inhibits the effectiveness of some drugs (eg Mills et al 2005; Winslow and Kroll 1998). Policy might target encouraging patients and physicians to better engage and communicate so as to lessen asymmetry of information. For example, Howell et al (2006) show how over 70% of Hispanic users of TM are not asked by their doctor whether they were using herbal remedies. Further, only one third stated that herbs had potential interaction effects with prescription medicines. Thus, patients do not systematically reveal that they have been taking other medications, and this problem is particularly acute if large cultural differences (such as language barriers) between patient and doctor exist. Better levels of communication might be achieved if levels of trust between certain providers and individuals were higher (Russell 2005) and patients did not feel stigmatized for using TM. If physicians made it a standard practice to enquire about TM use, this may encourage reporting, increasing the changes of the individual's full drug history being revealed. In turn, regulatory bodies need to start incorporating the potential side effects from drug interactions amongst more frequently used combinations in order that physicians have to hand such information.

The study also sought to fill a gap in knowledge regarding outcome indicators for use of traditional medicines. Existing studies, at best, ask for the respondent's level of satisfaction following treatment and do not use tangible measures such as those used in literature associated with measuring health outcome. The EQ5D has thus been applied to test the 'before and after' effect, and results show marked changes in quality of life and satisfaction, indicated by positive changes following traditional medicine use.

The high levels of satisfaction recorded suggest that users of TM/TMP are, on the whole, pleased with outcomes. Revealed high satisfaction scores show that in the short run TM are effective for relieving symptoms and improving health dimensions. This implies that even if access to orthodox medicines were improved, individuals may not necessarily switch to it and consequently there may be some resistance to changes which fail to take into account the root reasons of TM utilization. These reasons may reflect cultural preference (the upshot being that orthodox and traditional medicines are not perfect substitutes) and genuine belief that TM is effective and sufficient. Policies which potentially increase access to orthodox medicines in developing countries – such as special pricing by pharmaceutical companies for developing countries – may find that individuals have already found their own solution in dealing with common diseases like malaria and uptake of modern medicines may not be as high as projected once TM use is factored in. Crucially, this suggests that policies must take into account the local context and environment, to research what systems prevail and be culturally sensitive in introducing new projects. Failure to do this neglects the fact that the existing institutional setup has both sufficed and satisfied for hundreds of years.

Given its popularity, the question remains as to why people leave it to the second recourse, or a back up option, to try TM. Three explanations are offered here. Firstly, the revelation of TM use is closely guarded, especially where the presence of orthodox medical personnel is strong. People commented that doctors do not like, or think lowly of, traditional or herbal practices. Secondly, some do not see it as a 'recourse' at all because it is already part of their daily lives – many use TM as we might vitamins or as dietary supplements – so may fail to mention it. Thirdly, the use of medicines is known to be disease specific, so the use of traditional medicines is directly related to the symptoms experienced. All of these reasons could lead to under-reporting. Further investigations looking at disease or need standardized choices and reasons for dissatisfaction with first providers would partly answer these queries.

Findings show that an exploration into the key reasons for such high levels of satisfaction and the integration of the most popular elements could inform policymakers of potential changes to the orthodox system. Although the ministry of health has officially recognized the need to integrate TM, it remains silent on how this might be achieved from a users' perspective, leaning more towards the supply side, promoting regulation, quality and standards, working with healers and building scientific research and training capacity (MOHG 2007). Whilst all of these are vital, they would be better informed with indicators of utilization and resulting satisfaction. For example, individuals may be appreciative of the quality of care received from healers which leads to high levels of satisfaction. If this is so, policymakers need to reflect upon the care deficiencies in the orthodox system.

Traditional systems still freely coexist in conjunction with orthodox systems, and even where formal systems of care exist, knowledge about plant medicine and its preparations is strongly embedded within local communities and so use remains high - demand for TM remains widespread and plays an important component of analysis once preferences and constraints are taken into account (Ensor and Cooper 2004). There is a definite role for both systems of care - and this study serves to strengthen the position of TM - but Ghana Health Service's goal of full integration is hampered by the lack of data which would give a clearer, more dynamic picture of the actions taken in sequael by sick individuals, and the consequent levels of satisfaction. In this sense, longitudinal data tracking individuals over a prolonged period of time and a cost benefit analysis using medicines cost data would add greatly to this study. Overall, the study advocates to look at the system holistically rather than TM as an appendage to the orthodox system. Policies and research which fail to do this will miss half the story when considering access to medicines in Ghana. In collating more demand side data at the user level, policymaking in resource constrained countries would be better informed as to how to integrate TM with existing policies in a practical and fruitful manner.

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APPENDIX

Table 2b - total number of recourses sought by acute and chronic illness and region, weighted

	Number of recourses sought total																		
	with needs	0	%	1+ inc SM	%	1+ exc SM	%	2+ inc SM	%	2+ ex SM	%	3+ inc SM	%	3+ ex SM	%	4+ inc SM	%	4+ ex SM	%
ACUTE																			
GA	381	4	1.0	377	99.0	331	86.9	87	22.8	68	17.8	11	2.9	7	1.8	0	0.0	0	0.0
UW	60	3	5.0	57	95.0	53	88.3	18	30.0	13	21.7	2	3.3	1	1.7	0	0.0	0	0.0
Total	**441**	**7**	**1.6**	**434**	**98.4**	**384**	**87.1**	**105**	**23.8**	**81**	**18.4**	**13**	**2.9**	**8**	**1.8**	**0**	**0.0**	**0**	**0.0**
CHRONIC																			
GA	359	2	0.6	357	99.4	347	96.7	126	35.1	96	26.7	16	4.5	16	4.5	7	1.9	0	0.0
UW	27	1	3.7	26	96.3	26	96.3	17	63.0	17	63.0	7	25.9	7	25.9	1	3.7	0	0.0
Total	**386**	**3**	**0.8**	**383**	**99.2**	**373**	**96.6**	**143**	**37.0**	**113**	**29.3**	**23**	**6.0**	**23**	**6.0**	**8**	**2.1**	**0**	**0.0**

**source: author's own*

**Derivation of weights: weight using gender statistics by region, for 2010.*

1. *Apportion percentages of total for each of the following using population data: male-Upper West, male-Greater Accra, female-Upper West, female-Greater Accra.*
2. *Compare each category with sample data*
3. *Derive weights by calculating population statistics/sample statistics*
4. *Weights are: male-Upper West 0.222445, male-Greater Accra 2.363463, female-Upper West 0.216964, female-Greater Accra 1.86199.*

** SM indicates self medication, percentages given as proportion of row total*

**figures rounded to nearest whole number*

APPENDIX CONTINUED

Table 3b – changes in dimension, by type of illness, unweighted

Weighted changes in dimension						
Mobility	acute+chronic	%	acute	%	chronic	%
-2	0	0.2	0	0.0	0	0.0
-1	0	0.1	0	0.0	0	0.0
0	97	44.8	44	46.3	60	44.4
1	92	42.3	37	38.9	61	45.2
2	27	12.5	14	14.7	14	10.4
Total	217	100	95	100	135	100
Self care	acute+chronic	%	acute	%	chronic	%
-2	0	0.2	0	0.0	0	0.0
-1	0	0.1	0	0.0	0	0.0
0	99	45.7	47	50.0	58	43.0
1	89	40.9	34	36.2	57	42.2
2	28	13.1	13	13.8	20	14.8
Total	217	100	94	100	135	100
Activities	acute+chronic	%	acute	%	chronic	%
-2	3	1.2	2	2.1	0	0.0
-1	0	0.2	0	0.0	0	0.0
0	87	40.2	37	39.4	54	40.3
1	96	44.0	40	42.6	64	47.8
2	31	14.4	15	16.0	16	11.9
Total	217	100	94	100	134	100
Pain	acute+chronic	%	acute	%	chronic	%
-2	3	1.2	2	2.1	0	0.0
-1	0	0.2	0	0.0	0	0.0
0	48	22.1	16	17.0	32	23.7
1	100	46.2	43	45.7	64	47.4
2	66	30.3	33	35.1	39	28.9
Total	217	100	94	100	135	100
Anxiety	acute+chronic	%	acute	%	chronic	%
-2	0	0.2	0	0.0	0	0.0
-1	4	2.1	2	2.1	2	1.5
0	93	43.2	48	51.1	49	36.8
1	95	43.9	35	37.2	67	50.4
2	23	10.6	9	9.6	15	11.3
Total	215	100	94	100	133	100