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AGA KHAN UNIVERSITY

Postgraduate Medical Education Programme

Medical College, East Africa

**PERCEPTION OF FINAL YEAR UNDERGRADUATE
MEDICAL STUDENTS TOWARDS FAMILY MEDICINE IN
DAR ES SALAAM, TANZANIA**

By

DR. ERIC LUGGAR AGHAN

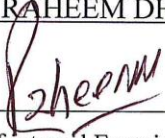
A dissertation submitted in part fulfillment of the requirements for the degree of
Master of Medicine
In Family Medicine

Dar es Salaam, Tanzania


4th October 2013

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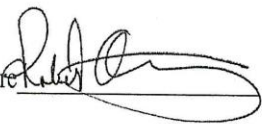
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ABSTRACT

Primary health care was identified as the ideal model of health care delivery during the Alma Atta conference in USSR in 1978. The World Health Organization urged member countries to adopt it as a model of health care service delivery to their people. Since then many countries have adopted a primary health care model including Tanzania. In countries such as Cuba and Costa Rica where primary health care has successfully been implemented, access to affordable and quality health care service to all has resulted in lowered morbidity, mortality, improved quality and longevity of life. The success story behind primary health care implementation in these countries has been attributed to family physicians taking a leading role. In 2008 the World Health Organization (WHO) challenged all countries to train more family physicians and emphasized the need to fully implement the primary health care model. Despite this call, there has been a decline in the number of doctors applying for family medicine residency programmes especially in developed countries and in Africa many countries are yet to start the training of family physicians.

In Tanzania the Aga Khan University has been offering family medicine residency for more than five years. The number of local applicants to this program has remained low. To explore the reasons as to why this is the case, a qualitative study was designed. The study question was “what are the undergraduate medical students’ perceptions towards family medicine?”

Methodology

This was a qualitative study carried out in two universities; Muhimbili University of Health and Allied Sciences (public) and the Hubert Kairuki Memorial University (private) among final year undergraduate medical students. A self-administered open-ended questionnaire was constructed, validated and used as the study tool to collect the data. The questionnaire was administered to all 212 final year undergraduate medical students in both institutions and the return rate was 84.5%. The questionnaires were administered by a research assistant at each institution. The final year class in each institution had four clinical rotation groups to which the questionnaire was administered and collected at different times. The answers of the open-ended questionnaire were treated as qualitative data (texts) and were analyzed through a data-led four-step method of

analysis as described by Giorgi's methods of analysis (1985). Themes were identified through the analysis and further validated through researcher triangulation.

The study was approved by the Aga Khan University Ethics and Research Committee, Muhimbili University Research and Publication Committee and the Tanzania National Institute for Medical Research.

Results

The gender distribution was 67% males and 33% females. 47% of the respondents had heard of family medicine while 53% had not. 36% of those who had heard of family medicine reported that they had had an exposure to a family physician. The exposures were through friends, family or at a private hospital. 40% of the females who had heard of family medicine said they would consider family medicine as a future career choice while only 17% of their male counterparts said they would consider family medicine. No significant difference in level of awareness was noted between the two universities.

Among those respondents who had an awareness of family medicine two themes could be described. The first theme illustrates **a profound lack of understanding of the role of family physician**, described in three sections: The holistic doctor, the family doctor as serving special families only, and family medicine in the medical hierarchy and as a strategy for the health care system. Most of the students did not understand the concept of family medicine, for example some thought a family physician was a doctor for specific families/ special families, others thought (s)he dealt with family planning and hereditary diseases that run in families. Some did not understand how a family doctor differed from a medical officer. The second theme described that **Personal competences and community needs are perceived as the main determinants of future career specialization**. This theme is described in two sections showing that the professional and community needs come first, and that role modeling, professional status and accessibility are important determinants: Community needs, personal interest, personal skills, subject performance and role models were factors reported to influence how the students made future career decisions.

Conclusion

The results show a general misinterpretation of the concept of family medicine, which is likely to influence the career choice among these future doctors. If family medicine is to be successfully introduced in Tanzania there will need to be interventions aimed at raising awareness of the role of family medicine within the health care system. Aga Khan University will need to increase awareness among medical students of the programme they offer. At the same time it will be important that other medical schools be encouraged to start family medicine programmes. Working with government to influence policy related to family medicine is also suggested as an important strategy for the future.

LIST OF ABBREVIATIONS

AKU.....	Aga Khan University
AT.....	Anne-Charlotte Tulinius
FM.....	Family Medicine
FP.....	Family Physician
HKMU.....	Hubert Kairuki Memorial University
IMTU.....	International Medical and Technological University
MDGs.....	Millennium development Goals
MUHAS.....	Muhimbili University of Health and Allied Sciences
NIMR.....	National Institute of Medical Research
PHC.....	Primary Health Care
WHO.....	World Health Organization
WONCA.....	World Organization of Family Doctors

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My gratitude to the library staff, as well as my family for their support

Thank you all

DECLARATION

I declare this dissertation does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university and that to the best of my knowledge it does not contain any material previously published or written by another person except where due reference have been made in the text.

DR. ERIC LUGGAR AGHAN

Signature

A handwritten signature in blue ink, consisting of several loops and a trailing flourish.

11th October 2013

TABLE OF CONTENTS

AGA KHAN UNIVERSITY	I
ABSTRACT.....	III
LIST OF ABBREVIATIONS.....	VI
ACKNOWLEDGEMENT	VII
DECLARATION	VIIIVIII
TABLE OF CONTENTS.....	IIX
LIST OF FIGURES	XI
Figure 1: The study process	XI
Figure 2: Pie chart of FP ratings by UGMS.....	XI
Table 1: Summary of study participants’ distribution.....	XI
Table 2: Awareness vs. Exposure	XI
Table 3: Choice and role of family physician	XI
BACKGROUND	1
Research Question	7
METHODOLOGY	8
Setting and Study participants	8
Pilot study to validate the questionnaire	9
Sample size	11
Data Collection and Analysis.....	12
Figure 1 the study process.....	13
Ethical approval	13
RESULTS	14
Table 1: Summary of study participants’ distribution.....	14
Table 2: Awareness vs. Exposure	14
Table 3: Choice and role of family physician	15

Figure 2: Pie chart of FP ratings by UGMS	15
DISCUSSION	21
Study limitations	23
CONCLUSION AND SUGGESTIONS	27
APPENDIX 1: Amended version of the questionnaire that was distributed.....	28
APPENDIX 2: Original Questionnaire	30
APPENDIX 3: Information to the Participants.....	33
APPENDIX 4: Primary category answers	35
APPENDIX 5: Pilot results, category answers	40
APPENDIX 6: My pre-understanding of perception of final year UGMS on FM in Dar es Salaam, Tanzania.....	43
REFERENCES	45

LIST OF FIGURES

Figure 1: The study process

Figure 2: Pie chart of FP ratings by UGMS

Table 1: Summary of study participants' distribution

Table 2: Awareness vs. Exposure

Table 3: Choice and role of family physician

BACKGROUND

Primary health care (PHC) was identified in 1978 during the Alma-Ata conference in the USSR as an ideal health care service delivery model(1). Primary health care was defined during the Alma-Ata conference as; “essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination”(2). Since then, many countries have adopted a PHC model including most of African states.

Starfield, Shi et al (9) analysis of health costs and effectiveness of primary health care noted that in African countries the wealthiest 20 percent of the population receives well over three times as much financial benefits from overall government spending compared to the poorest 20 percent of the population. They also noted that for primary care the ratio of rich to poor in the distribution of government expenditure was notably lower; 23percent to the rich versus 15 percent to the poor (9). De Maeseneer in his description; of critical appraisal of primary health care implementation in sub Saharan Africa brings to sharp focus the hospital-centrism, fragmentation of primary care and the wastage of limited resources through duplication of services as disease specific programs run parallel to primary health care. He describes a need to reorganize primary health care, adopt strategies such as community oriented primary care and engage family physicians fully in order to deliver holistic, preventive and health promotive care(5). Haq et al(3) noted that for a successful implementation of primary health care, physicians trained with broad based knowledge of local disease patterns and relevant clinical skills contextual to the population must be involved in its implementation. These authors also proposed family physicians who are locally trained as best suited to carry out this mandate(3).

A brief review of some of countries which have successfully implemented PHC will help in illustrating how adoption of a PHC model can help in health care system transformation. Exploration of reasons for their success will also be briefly discussed. In Cuba for example, which

has one of the best primary health care systems in the world, family physicians have been the core of its implementation. The community-based poly-clinics are run by family physicians who coordinate the health service delivery in collaboration with other health workers. They coordinate patient care, are involved in disease surveillance, health promotion, training of other cadres of health workers, as well as performing administrative duties. Overall this has resulted in a decline of under-five mortality from 46 per 100,000 in the 1970's to seven deaths per 100,000 in 2004. The average life expectancy has risen from 63 years in 1960s to 77 years in 2004(4). In Costa Rica which also adopted PHC and involved primary care physicians in running of the system, the infant mortality declined to levels comparable to countries with established health care systems such as in the United States of America(9).

Starfield et al (9) reviewed the contribution of primary care to health systems and health in United States and noted that income inequality and primary care were significantly associated with self-rated health, but supplying primary care physicians significantly reduced the effect of income inequality on the self-reported health status(9). A higher ratio of primary care physicians was also found to be associated with greater effect on various aspect of health in more socially deprived areas (as determined by high income inequality). As an example the post neonatal mortality was 17 percent less compared with the population mean whereas the post neonatal mortality was seven percent higher in areas of high income inequality and few primary care resources(9). In the United States, a state-level analysis, the adverse impact of income inequality on all-cause mortality, heart disease mortality and cancer mortality was considerably diminished where the number of primary care physicians was high in the county-level analyses. In cost analyses it has been found that areas with a higher ratio of primary care physicians per individual in the population have much lower total health care cost than other areas. This can possibly be attributed to better preventive care and lower hospitalization rates(9,10). Improved health outcomes are associated with a healthier and a more productive workforce and with less morbidity and mortality. Another example is Portugal which in 2006 replaced existing primary health care system with legislation on Family Health Units. This was aimed at bringing primary care physicians closer to the community and improving the ratio of primary care physicians to specialists which was skewed in favor of the latter (11). Jusot et al(12) found that where general practitioners do gate-keeping it significantly reduces the

inequities in health care access and also provides better guidance for people with lower socio-economic position. This finding was supported by prior evidence that specialists tend to increase demand for costly and sometimes unnecessary procedures(9,12).

The evidence suggests that there are significant benefits achieved with the introduction of PHC within a health care system. The clear understanding of family medicine and family physicians is critical in arguing for or against, especially for countries such as Tanzania which are yet to recognize family physicians as a specialist with a role in PHC. Family medicine is the specialty of family physicians, and it has been in existence for a long time under different names in different regions such as “general practice” or “family practice”. In the United States of America the history of family medicine dates back to 1969 with adoption of three committee reports;

1. The Millis Commission: the Citizens Commission on Graduate Medical Education.
2. The Folsom report: the National Commission of Community Health Services and
3. The Willard Committee: an Ad Hoc Committee on Education for Family Practice.

These reports described the need for Americans to have a physician who focuses not on individual organs and organ systems, but upon the whole person who lives in a complex setting. The committees were formed upon realization that the highly specialized care that had taken root in early 1900 was less effective and more costly as compared to the general practice that was being commonly practiced in Europe and Russia(6). By definition “family medicine is a medical specialty which provides continuing, comprehensive health care for the individual and family. It is a specialty in breadth that integrates the biological, clinical and behavioral sciences. The scope of family medicine encompasses all ages, sexes, each organ system and every disease entity”(6,7). The contribution of general practice has been defined as provision of personal, primary and continuing care to individuals, families and a practice population irrespective of age, sex and illness(8).

The three terms “family medicine”, “family practice” and “general practice” have been used interchangeably throughout this study.

Despite the WHO promoting the agenda of training family physicians to run PHC, applications to the position of family medicine residency have been declining in countries such as United States of America, Canada, Switzerland and more. Buddeberg-Fischer et al (16) in their introduction note that in the United States of America there has had a decline in the number of graduates going into primary care, from 53.3 percent in 1997 to 21.3 percent of all the graduates in 2005. The same authors noted a decline in the interest for the position of family medicine residency in Switzerland (16). In most African countries policies on establishment of family medicine are still lacking and where legislation has taken place the programs are relatively new and graduating only a few family physicians per annum.

Due to the fact that family medicine is relatively young or non-existent in most African countries, studies looking at perceptions towards family medicine as a specialty are lacking. The literature review for this study mainly gave access to knowledge produced in developed countries where health care systems are well established as compared to the African context possibly facing different challenges when it comes to training of family physicians. Due to the lack of exposure to family physicians or family medicine among medical students in Africa the results of the literature study may not mirror the African context. A study to evaluate the attitude of medical student towards general practice and general practitioners done in United Kingdom found that most students have a positive perception (Likert score of 3.90/5, 95% confidence interval [CI] =3.86 to 3.94). In this study Henderson et al (19) reported students' attitudes and perceptions towards family medicine/general practice improved as one advanced from first year to final year of study. The positive perception was attributed to exposure to family physicians/GPs. In Spain a study of attitudes towards family medicine showed that various factors influenced undergraduate medical students' choice of family medicine. As the most important examples of these factors included; the pay, that a member of one's family is a family physician, that there are Family Physicians in the teaching institution, and that the students have participated in an elective exchange to an institution with family medicine(11).

There are many studies done in Africa, Asia and Western countries looking at factors that influence a doctor's decision when making a career choice. While the majority of these studies in

African context are general studies across medical specialties, studies from developed countries are more specific on the discipline of family medicine. In three studies on factors influencing career choices done in Nigeria, Gambia and Pakistan, - most students based their career choice on prestige, personal interest, urgency of care and role models(21,24,25). The Gambian study looked at general factors informing career choices, and the researchers found that the surgical specialties were favored over and above the rest. The Nigeria project studied general factors and did not specify any specific discipline, which is important to note as the preference was for a surgical discipline in both of these studies and the lack of mention of general practice(24, 25). A survey done in Kenya on factors influencing choice of pediatrics as a career among medical students showed that intellectual challenge, role models and ease of combining career and raising family were important factors when choosing a medical specialty(27). In a study done to evaluate factors affecting choice of family medicine by medical students in Turkey, it was found that prestige, money and personal development, and desire to work in urban setting were the most important factors considered(28).

In a review of 36 articles published since 1993 and rated for quality, Janet, et al (20) reported rural background related positively to choice of family medicine while parents' socio-economic status related negatively. Career entry intentions played a major role in choice of family medicine. The students who believed that primary care was important had low income expectations and thus were likely to choose family medicine. Equally those students who did not plan a career in research were more likely to choose family medicine. Faculty role models acted as either positive or negative influence to family medicine choice(20). In studies done in Canada and Switzerland; prestige, heavy workload and experience in the ward were reported as factors influencing the choice of family medicine as a career specialty. The respondents reported their encounter with patients admitted after being under care of primary care physicians as negatively impacting on their choice of family medicine. The students were also uncertain if they were adequately prepared to handle the wide range of conditions in primary care as opposed to being specialists in other medical specialties. In the same study it was noted that entering into the field of family medicine was like a dead end unlike other specialties where one could sub-specialize (16,17). In another study done in Canada evaluating factors influencing career choices made by students,

residents and practicing physicians it was shown that - personal interests and previous experiences played a major role (26). Other studies designed to explore this phenomenon have identified various factors that contribute to low uptake of family medicine. In studies evaluating the decreasing numbers of applicants for the positions of resident of family medicine it has been showed that poor pay, prestige and perception of family medicine as less intellectually challenging specialty play a big role in the making of a decision on family medicine as a career choice. Morra et al (18) reported 85-89 percent of their respondents felt that family physicians' pay was too low and that it would be better to specialize in other fields in order to be able to pay off your financial debts faster. There was also a noted decline in the interest towards family medicine as the students progressed from first year of study to fourth year (70 percent to 30 percent respectively) (18). This finding is in contrast to a study done in England which reported an increase in the interest towards family medicine with advancement in seniority (19). In Greece a survey of final year undergraduate medical students using a self-administered open and close-ended questionnaire showed that guaranteed employment was a major factor influencing career choice towards family medicine. In the same study less than five percent would choose family medicine (21).

The agenda of introducing family physicians to the Sub-Saharan health care system has been an ongoing effort. South Africa, Egypt, Nigeria and Kenya have established a family medicine residency program in some of their public universities (3,13). This agenda has been supported by World Organization of Family Doctor (WONCA) with its consensus statement that called for training of a critical mass of family physicians in order to help implement and achieve objectives and goals of Primary Health care in Africa. In its statement family medicine is noted as a core contributor to primary health care as well as critical to the achievement of equitable health outcomes for all. WONCA also notes that the concept of comprehensive primary health care and the principles of family medicine overlap considerably and as such should be considered together. WONCA further notes that in African context the family physician is a clinical leader and a consultant in the primary health care team, ensuring primary, continuing, comprehensive, holistic and personalized care of high quality to individuals, families and communities (14). In Tanzania the Aga Khan University Dar es Salaam has been training family physicians since 2006 and

introduced a similar course in Nairobi in 2012. Despite the program having been in existence for about six years, the rate of local applicants to the program has been minimal. The Aga Khan University Dar es Salaam Masters of Medicine, Family Medicine degree offers to provide Family Physicians with clinical skills, management skills, teaching skills, and leadership and research skills. It was created in response to the call from the World Health Organization (WHO) on the need for public-private initiatives in training of health care personnel, as well as its focus on importance of Primary Health Care in health care delivery. This was as a result of the WHO Africa region in 2008 adopting the Ouagadougou declaration on primary health care and health systems in the new millennium (15).

Research Question

In an effort to understand why the uptake of family medicine residency position was low in Tanzania, The researcher sought to explore the perceptions of final year undergraduate medical students towards family medicine, and to describe the factors that influence their career choice. The findings from this study are expected to be used to inform the Aga Khan University on possible interventions to improve the numbers of local applicants to the positions of family medicine residency in Dar es Salaam Tanzania. The study findings were further envisaged to form a platform for future studies on this subject in Tanzania.

The research question was: “What are the perceptions of Tanzanian final year undergraduate medical Students’ towards Family Medicine?”

METHODOLOGY

Setting and Study participants

This study was conducted among final year undergraduate medical students in two universities in Dar es Salaam Tanzania; Muhimbili University of Health and Allied Sciences (MUHAS) located in Upanga and Hubert Kairuki Memorial University (HKMU) in Mikocheni. Neither university has family medicine residency programmes or Departments of Family Medicine.

Muhimbili University of Health and Allied Sciences is a public university with approximate 160 medical students per class. The students go through a five-year undergraduate medical program, after which they undergo one year of internship. The University also has postgraduate programs which include; Master in Medicine, Surgery, Pediatrics, Internal medicine, Obstetrics and Gynecology, Anesthesiology, Orthopedics, Ear, Nose and Throat surgery and Orthopedic Surgery. The postgraduate school also offers other subspecialties such as Cardiology among others.

Hubert Kairuki Memorial University is a privately owned institution and offers various undergraduate and postgraduate degrees. Among the undergraduate degree is Bachelors' of Medicine, and Nursing, and the Postgraduate school has Master of Medicine in Pediatrics, Internal medicine, Surgery and Obstetrics and Gynecology. The Hubert Kairuki Memorial University produces about 60 medical graduates per class per annum as per 2012.

In Tanzania there are five medical colleges. One public university, two are faith based cum public universities while the remaining two are privately run.

A self-administered open-ended questionnaire was administered to all final year undergraduate medical students in each participating institution. The two medical schools were chosen to give a representation of both public and private colleges.

The questionnaire initially was meant to be administered in a classroom set up, but due to the nature of class rotation and the division into clinical groups this was not possible. Modification to

the initial methodology was done to allow each subject from the various clinical rotation groups to fill the questionnaires independently; the filling in of the questionnaire was unsupervised. This strategy was chosen because rotations took place in the wards and the students met briefly for a group session in which the assistant could issue and collect the questionnaires.

The questionnaire had two parts; Part 1 was used as a screening tool for awareness and Part 2 was used to explore the students' perceptions and the factors that influenced their future specialty career choice. After obtaining informed consent from each participant the questionnaires were administered and collected by one research assistant from each of the participating universities. The research assistant checked the questionnaires for completeness before collecting them. Both research assistants were medical students. The researcher did not have any prior contact; He was introduced to these students by the institution administration.

Subjects were included in the analysis if part 1 and 2 were sufficiently filled. The questionnaire had total of 15 analyzable questions excluding bio data. The parts were considered sufficiently completed if at least 80% of the questions were responded to. This percentage was an arbitrary chosen figure. The questionnaires, in which only the awareness part was filled, were included in the analysis to determine the awareness levels but not included in the thematic analysis of perception. There were four questionnaire which did not have sex and age marked, these were randomly assigned two to male and two to female, and they were then included in the analysis.

Subjects were excluded from analysis if their questionnaires did not meet the above set criteria. In total two questionnaires were excluded from the analysis.

Pilot study to validate the questionnaire

To ensure that the study tool addressed the study objectives, the researcher developed and face validated the questionnaire through a pilot study, see appendix 1. The pilot study took place in June 2012 prior to onset of main study. Ten final year undergraduate medical students from the International Medical and Technological University (IMTU) a medical training university in Dar es Salaam Tanzania were conveniently chosen to participate in the pilot study. The students were

asked to fill in the questionnaires, and after filling in the questionnaire they participated in a focus group to obtain their feedback on the ease of understanding the questions, clarity of the questions and if they felt there were any ambiguities with any of the questions. They were asked if there were any terminology used that was hard to understand or that had a double meaning. Their suggestions on how to make the wording of the questionnaire clearer was also sought. The results from the pilot data were analyzed to determine how usable the tool was and whether the data met study objective. The researcher modified the questionnaire taking into consideration the input from the pilot study subjects. From analysis of the pilot data it was felt that the study tool sufficiently met the study objective, but questions 1 and 2 on primary health care were taken out as it was felt by the pilot participants that these questions were outside the scope of the study. Pilot data were not included in the final study result analysis but is attached as appendix 5.

The original questionnaire had been adapted from the generic role perception questionnaire as developed and validated by Stuart Mackay (29) with permission, see appendix 2. This initial tool was found not to be transferable to the study context as it was developed for English population based on a pool of constructs from students of different health professions in England. Most of the other available tools utilising repertory grid as described by Kelly (1955) are based upon his personal construct theory, and are also developed and validated in western countries (29). Mackay's presupposition was that professionals make a judgment about another professional through their interpretation of their knowledge and experience of that professional, which may be based on accurate or inaccurate information. Kelly's and Mackay's presuppositions gave me a doubt as to whether the study tool could be based on theoretical models that may not provide an in-depth understanding of the study phenomenon in the local context of Tanzania medical schools. Giorgi's phenomenological method of analysis was utilized as an alternative to allow the description of the study phenomenon in the relevant context as described below.

The "Phenomenon" is taken in perspective of "existential Phenomenological methods" as described by Giorgi 1985. These methods have four basic characteristics, first is analysis and interpretation that follow the concrete and naïve description given by the participants instead of giving an explanation from the theoretical standpoint of researcher. Second characteristic is taking

meaning of any experience exactly as it appears or is presented in consciousness. Third is the search for essences, in which researcher looks for invariant and unchangeable characteristics of the particular phenomenon under study and finally is the notion of intentionality which refer to act by every human being to relate to the world and objects (30, 31).

Before the study was commenced I wrote down my pre-understanding expressing my expectations for the outcome of the study. This was done to have a clear sense of my own starting point. The researcher is a tool in qualitative research, so it is important to keep a reflexive account of own expectations and insights as they develop to avoid the results being only reproductions of the researcher's own understandings. As a research tool the pre-understanding and the researcher's developing understanding of the studied phenomenon will always influence the way the data analysis is interpreted. Only through researcher's reflexivity will it be possible to keep an account of the contribution of the researcher's understanding to the results. The pre-understanding was given to and discussed with the methodology supervisor prior to start of the study to initiate the reflexive account.

Sample size

From the pilot study less than 50 per cent of the students had heard of family medicine. A decision was therefore made to survey all 212 final year undergraduate medical students rather than take a sample. Sampling the entire class allowed the researcher to screen for awareness and purposefully choose those aware of family medicine for participation in the part of the study exploring the students' perceptions. Perceptions were determined from those with awareness as defined in the study protocol: Perception was defined as the processes that organise information in the sensory image and interpret it as having been produced by properties of objects or events in the external, three-dimensional world (42). Perception was analysed only from questionnaires of those participants who had heard of family medicine. This was part 2 of the questionnaire. The return rate from both institutions was 84 per cent (185). The questionnaires were checked for completeness before they were analyzed. 90 per cent (167) of questionnaires were considered sufficiently completed to be included in the analysis.

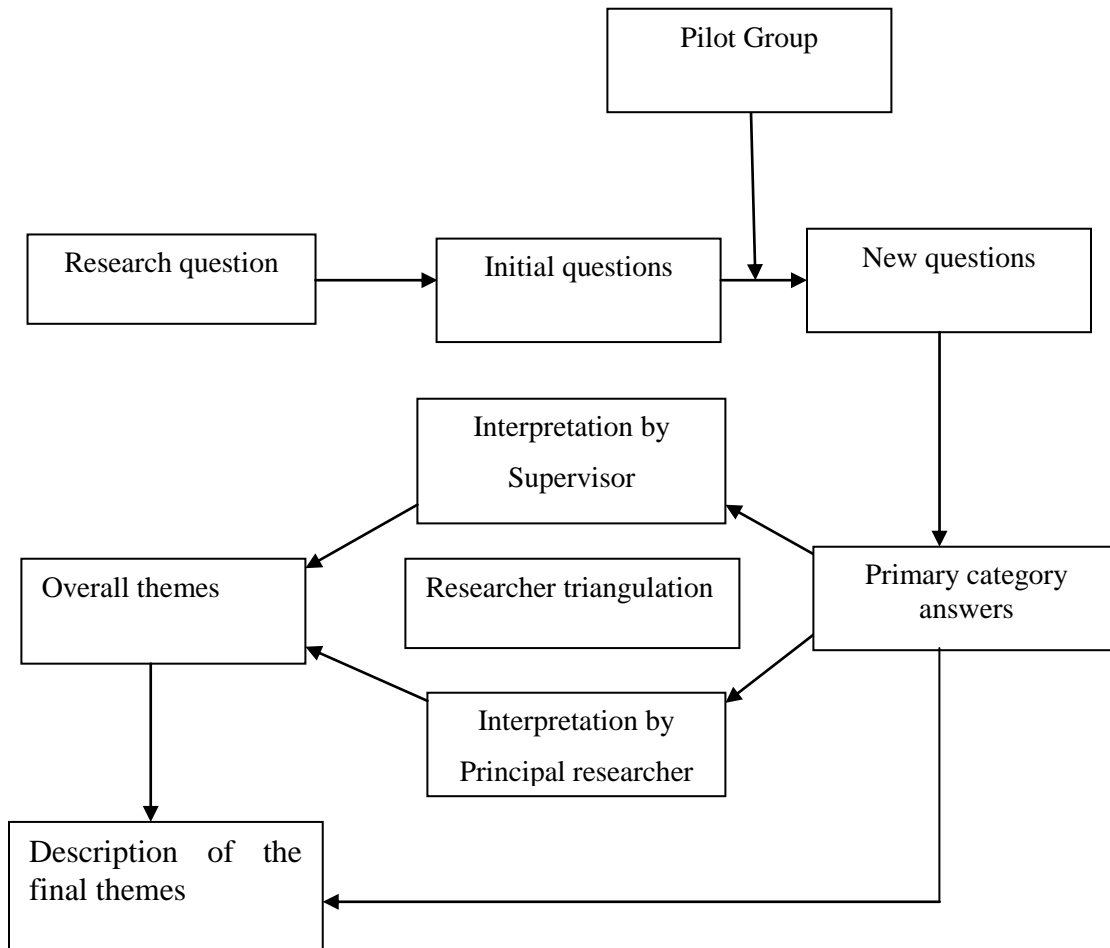
Data Collection and Analysis

Data were collected using an open-ended questionnaire that had been developed specifically for this study in a pilot study and where face validity was established as part of the research process, as shown in figure one. Apart from awareness and perception of family medicine the questionnaire also captured demographic characteristics such as age and gender. The questionnaire had an option for the participants to grant me permission to contact them in case some of the responses needed clarification or if during analysis I felt there was need for further information. After coding and preliminary analysis of data, I did not contact the participants who had left their contact details for further in-depth interview as there were no issues in major need of further clarification.

The analysis was data driven in a phenomenological approach as described by Giorgi (1985) (30,31). Responses from study participants who were aware of family medicine were coded into primary category answers. The forming of the categories went through the process of text condensation, firstly getting an overview of the data by reading all the answers several times; secondly identifying meaning bearing units, and possible interrelations to form the categories; thirdly identifying quotes that best illustrated the categories; and fourthly writing the thick descriptions presented here in the results section. Raw data (quotes from the answers in the questionnaires) are given as examples and are shown in italics in the result section of this paper.

The primary category answers were interpreted by the researcher and one of the supervisors independently to identify themes (researcher triangulation) (32,33). Any differing themes were discussed until a common understanding was reached. What the respondents reported was taken as their perception, their understanding of the words and concepts, be it accurate or inaccurate to other (theoretical or empirical) definitions. Quantitative data were analyzed by cross-tabulation and presented as percentages. Any difference greater than 10 per cent was considered significant. Responses from participants were initially grouped by age, gender and institution to determine any particular trends.

Figure 1 the study process



Ethical approval

The study was approved by The Aga Khan Ethics and Research Committee (ERC), National Institute of Medical Research (NIMR) and Muhimbili University Research, Publication and Ethics Committee. Authority to carry out the study was obtained from the administration of the participating university through their director of research and publication.

RESULTS

The age range of respondents was from 22-36 years, 67% of the respondents were males while 33% were females. 47 % of the participants had heard of family medicine while 53 % had never heard of family medicine. There was no observed gender difference on awareness level and neither was there a difference in awareness between the public and the private university noted. 36% of those who had heard of family medicine had had exposure to a family physician while 64% had not. Summary of results are presented in table 1 and 2 in below.

Table 1: Summary of study participants' distribution

	MUHAS*	HKMU‡	TOTAL	Percentage (%)
Total population	152	60	212	100
Males	110 (72%)	32(48%)	142(65%)	65
Response rate	133(87%)	50(76%)	183(84%)	84
Completeness	121(79%)	46(70%)	167(90%)	76

*MUHAS-Muhimbili University of Health and Allied Sciences

‡HKMU-Hubert Kairuki Memorial University

Table 2: Awareness vs. Exposure

	Exposure	No Exposure	Total
Aware	28(36%)	50(64%)	78(47%)
Not Aware	0	89(53%)	89(53%)
Total	28(47%)	139(53%)	167(100%)

*MUHAS-Muhimbili University of Health and Allied Sciences

‡HKMU-Hubert Kairuki Memorial University

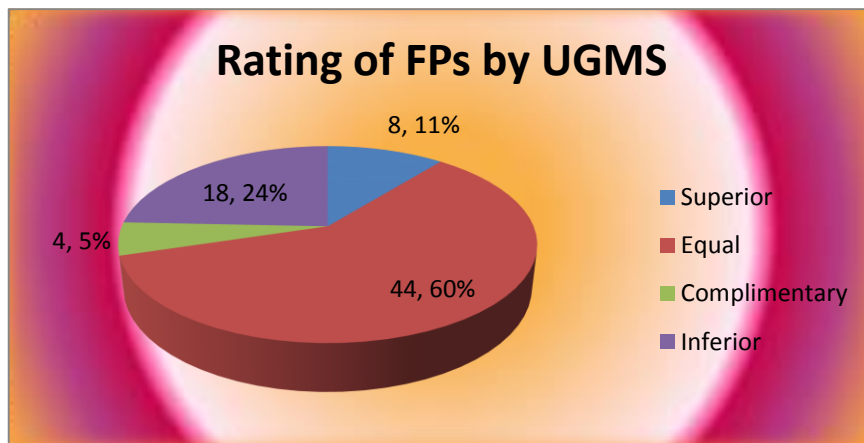
The majority of exposures were through relatives who were either doctors or friends of family who were doctors or residents in a family medicine program and private hospitals. The rest were mainly through elective rotations abroad and one was through attachment to a non-governmental

organization. For source of information on family medicine respondents reported; internet, books and journals and the majority got it from media (Television soaps, documentaries and movies). 42% of the females who had heard of family medicine would consider choosing family medicine as a future career choice while only 17% of male respondents indicated that they would consider family medicine. It was interesting to note that majority of the respondents when responding to whether they would choose a family physician to take care of their families' health, 89 per cent said yes. It was also interesting to note that 83 per cent of respondents said family physicians had a role in Tanzania's health care. The above is summarized in table 3 below. This was interesting considering that only a few would consider choosing family medicine as their specialty career. On rating of family physicians, more than 70% of the respondents reported that family physicians were equal or superior to other specialists as shown in figure 2 below.

Table 3: Choice and role of family physician

	Yes	No
I would want FP to take care of my family	68(89%)	8(11%)
FPs will have a role in Tanzania	58(83%)	12(17%)

Figure 2: Pie chart of FP ratings by UGMS



FP=Family physicians n, n%= actual count and percentage

UGMS=Undergraduate medical students

Responses from those participants who *had awareness of family medicine* were analysed as qualitative texts. When analyzed across the primary questionnaire categories, I identified two overall themes;

- 1. A profound lack of understanding of the role of the family physician and**
- 2. Personal competences and community needs perceived as the main determinants of future career specialization**

The overall themes were a product of researcher triangulation, using answers from all the primary categories to understand the answers at a more conceptual level.

- 1. A profound lack of understanding of the role of the family physician**

This theme can be described in three sections:

- *The holistic doctor*
- *The family doctor as serving special families only*
- *Family medicine in the medical hierarchy and as a strategy for the health care system*

The holistic doctor

Despite their awareness of family medicine, only a few of the respondents knew what family medicine is. Those who had been taught family medicine described a family physician as a holistic doctor who provides care to the general population regardless of age, gender and social economic status, as well as having promotive, preventative and curative roles. Examples of their replies are;

“A family physician is a doctor who treats holistically without choosing patient, sex neither disease”

“Family medicine is a specialty devoted to providing comprehensive care for people of all ages in the community”

“Family physicians deal with all ages, gender, diseases and every system of the body”

The family doctor as serving special families only

From the majority of the respondents there were answers in all sections of perception, awareness, expected skills, and career choice alluding that Family Medicine is for “special” people or families. The “special” was not further defined, but the answers suggested that “special” could mean “rich”, “especially challenging health problems.” Examples of this kind of responses are;

“Family Physicians have special clientele while the others can treat anyone who seek medical advice from them”

“Family doctors attend to special/wealthy families”

Others suggested that family medicine deals only with specific families and offer specific services such as counseling, family planning and treatment of non-communicable diseases that run in a particular family. Examples of these responses are;

“Family physician deals with diseases of a given family while other specialists deal with general population and all medical conditions”

“I think family physicians aim at knowing disease trends in a particular family unlike other specialists”

“Family physicians will have a role in Tanzania; they will provide family planning, family health education on disease prevention and control”

Family medicine in the medical hierarchy and as a strategy for the health care system

The expectation of Family Physician as “special” also influenced the descriptions of Family Medicine as a career choice either with a negative expectation of Family Medicine being inferior and selective in comparison with other specialties:

“Only the rich can afford to have a family physician”

“I don’t want to attend to one family; I want to treat as many patients as possible”

“There is no market for family medicine in Tanzania; it is expensive and not affordable”

Some of the perceptions and expectations whether correct or misinformed had a potential for positive influence on the description of family medicine as a career choice for example;

“It Saves time to deal with family one by one”

“I will choose family medicine so as to increase my source of income”

“Family medicine is good practice; it is not tiresome and has small risks”

“Since I want pediatrics and internal medicine Family Medicine would be good”

Those who said family medicine had a potential role in Tanzania’s health care system said it was good and a desired field which would help in addressing some of common medical problems at an early stage. For example;

“Family physicians are able to detect diseases early and treat the patient appropriately; they also deal with disease prevention and health promotion at family and community level”

“If adopted in Tanzania family medicine will help reduce morbidity and mortality”

“Family medicine will help promote community medicine in Tanzania”

2. Personal competences and community needs are perceived as the main determinants of future career specialization

This theme can be described in two sections:

- *The professional and community needs come first*
- *Role modeling, professional status and accessibility*

The theme on factors influencing career choice came out clearly especially when the respondents were prompted to state what informed their career choice and whether they would consider family medicine as a future career specialty.

The professional and community needs come first

The majority of the students reported that they would choose their future specialty based on what they enjoyed most during their clinical rotations, or that community needs would inform their future specialization, the influence of community need as a motivation for future career choice was a clear message among the responses. The considerations for the community needs were expressed in words like;

“I will choose my future specialty depending on my community needs”

“I will choose a career that serves my people and saves their lives”

“My career choice will depend on opportunities available and community needs”

Some respondents reported they would base their career choices on subjects that they themselves would perform the best, personal interests and professional and personal skills. Examples of this expectation were;

“I will base my career choice on subjects that I score highest marks”

“I will choose my future career specialty based on personal interest, area that I feel am competent in and marketability of that specialty”

Other respondents thought family medicine was a new discipline that combined internal medicine and pediatrics, and this played part as a factor that influenced the choice of family medicine to some for example expressed as;

“Am interested in both internal medicine and pediatrics and thus I think family medicine would be good for me”

Role modeling, professional status and accessibility

Role models, ease of entry and access to funds were cited as factors that play a role in determining future career specialty.

“I will choose my specialty based on how easy it is to gain entry and availability of funds to pay for it”

“I will choose what my role model has done”

There were also respondents who said that they had bigger dreams, so they would not choose family medicine, as this was perceived as an inferior medical specialty. Some of those who thought it was inferior however also expressed that they did not understand the difference between a family physician from a medical officer;

“I have bigger dreams thus family medicine is not an option”

“I don’t understand how different a family physician is from medical officer”

Lack of clear policy and job description on family medicine in Tanzania came up as a negative influence on the description of family medicine as an option for a future career choice to some of the respondents;

“No clear policy in Tanzania concerning Family Medicine which would make practice challenging”

“I don't understand how different a family physician is from medical officer”

DISCUSSION

My pre-understanding and expectations as presented in the Appendix 6 were that family medicine deals with family health while family physicians are doctors who treat families. I expected the majority to respond that family physicians were generalist and not specialists and thus inferior to other specialists. My other expectation for the knowledge and perceptions of the students was that they would see family physicians as less knowledgeable compared to other specialists; less paid compared to the work they are expected to deliver and thus less attractive to young doctors. I had anticipated that a few of the students might not have heard of family medicine.

It was therefore highly surprising to note that contrary to the expectation that the majority would consider family medicine as inferior, more than 70% considered family physicians equal or superior to other specialist. It was also interesting to note that more than 50% felt family physicians had a role to play in Tanzania. The other interesting finding was that contrary to my pre-understanding that a few students might not have heard of family medicine, actually less than 50% were aware of it and more so its existence in Tanzania. The results suggested that probably none of the students knew of existence of family medicine training program at the Aga Khan University in Tanzania. This assumption is based on the responses to questions on source of their information, exposure and whether they would opt to choose family medicine. From these findings it is clear that low levels of awareness exist and that this might have contributed to the low uptake of family medicine residency positions at the AKU. The same conclusion could not be drawn from the results on whether the students had negative or positive perception towards family medicine. There is a need to carry out a follow up study to explore this phenomenon once sensitization has taken place.

It was surprising and significant to note that contrary to my expectation that pay would be considered as a major motivating factor when making the future career choice, community needs, personal interest and personal competences were priority factors that influenced students' future career choice. Similar findings had however been reported in studies done in Nigeria and Jordan (24,34). Compared with the previous studies the emphasis on the community needs was new in this study. The emphasis on community needs as an important factor influencing career choice for

the medical students participating in this study gives hope for the development of family medicine in the region, if the political and organizational support is given. This is in line with the Health professionals for a new century: transforming education to strengthen health systems in an interdependent world recommendation on enabling actions. The enabling actions include; mobilizing leadership, enhancing investments, aligning accreditation and strengthening global learning (22).

Also, unlike studies from the developed countries such as Canada or England, where remuneration is cited as a major motivation when contemplating future specialty, participants in this study did not seem to put a lot of emphasis on finances. This difference could be due to the differences in financing ones' education. In Tanzania the government sponsors most of the students, whereas in developed countries students take loans to finance their own education. This creates debt that needs to be repaid. Studies done in Nigeria and Gambia also showed factors other than monetary gains had more influence on future career specialty choices (18,20,25). This study shows role modeling and prestige play a significant role in making future career choice. Studies done in Greece, Spain, England and Kenya though some using different methodologies have reported similar findings. In these studies role models had either positive or negative influence on students towards family medicine as a future career choice (19–21,23,35). The absence of family medicine in the universities involved in this study, might explain why most of students did not understand what family medicine was and will probably have affected their consideration of family medicine as a career choice.

Subject performance and practical skills were mentioned as factors that would inform career choice. Subject performance has been shown to influence area of specialty as students would want to concentrate on areas where they feel they are comfortable and better at. Skills wise most students by end of undergraduate training have passed through all the clinical areas and have an idea of what one is best at. In a study done in Pakistan skills and academic performance were reported as main factors that would influence future career choice (38).

The majority of the respondents mentioned their sources of information on family medicine being friends and media and surprisingly none mentioned exposure through the Aga Khan family medicine department. The television as source of information on family physician through programs such as soaps, documentaries and movies may portray family doctor differently than reality. Television programs tend to portray the family doctor as any doctor be it specialist cardiologist or general internist who is usually called upon by a particular family and renders services to that family when need arises. This could be inferred from the students' description of family physician, when asked what came into their mind when they heard "family physician". The medical students' misinformation on family medicine might have caused them to have a negative perception towards family physicians, or at least the profound lack of knowledge about family medicine displayed in their answers.

The inaccurate information on family medicine has been reported in other studies such as one done in Kenya where colleagues of family physicians were interviewed on their expectation towards family physicians' (37). Exposure to family physicians had positive impact on perceptions of family medicine. This was comparable to studies done in Spain where exposure to family physician imparted positive perception (36). The results of this study show that there is need to sensitize the students on family medicine and the role of family physicians. Lack of studies on perception of medical students on family medicine in East Africa and the little exposure to family physician makes it difficult to relate the concept of positive and negative perception as an influence on choice of family medicine as a future career. A possible follow up of my study would be to work towards improving the awareness and correcting inaccurate information on family medicine amongst undergraduate medical students. A subsequent study to look at attitudes and perceptions should also be done after the intervention.

Study limitations

This study had several strengths, first it was among the first studies in East Africa looking at awareness and perception as well as factors influencing career choice. Second the qualitative methods used allowed understanding of the research phenomenon based on the local context. The

detailed description of methodological rigor, validation of study tool, reflexivity and use of raw data with examples of quotes from the responses, further adds to the strength and transparency of this study. Third it sampled the entire population in the final year of study in two universities, a public and a private institution, thus comparing experiences of those who have adequate resources and those supported by the government. Had I not developed and validated the questionnaire specifically for this study, I would to a larger degree have questioned if the respondents had understood the meanings questions as they were intended. I cannot be certain that all students understood the questions, but by validating the questions through the pilot study I know that students of the same age and the same kind of environment understood the questions I used in the final questionnaire.

Qualitative studies have to prove the quality of the results as any other research project, although not with the same criteria as applies to quantitative studies. In this study I aimed to ensure the main qualitative validation criteria:

- Trustworthiness (including methodological rigour, and studying in a relevant context)
- Transparency (the thorough description and giving examples from raw data) and
- Reflexivity (relating pre-understanding, contextual issues and own positioning in interpreting the analysis).

The study also comprised of;

- Development and face validation of the questionnaire before using it
- Sampling the entire population of the two medical schools
- Use of researcher triangulation
- Description in detail of how data was collected and analysed and
- Use of quotes from the raw data as illustrations of the findings (39–41)

There was however also limitations encountered. First, most of the literature used in the literature review was from developed countries. This meant that the tools used in previous studies could not indiscriminately be transferred directly to this study.

The second limitation was time and resource constraint. The initial protocol had anticipated a methodology triangulation where the original questionnaire could be supplemented with in-depth interviews. This was only possible if the existing questionnaires could be used for the study. This was not possible due to the origin of the questionnaires. Instead of indiscriminately use of questionnaires with origin in different cultures, contexts and educational and health care systems, I chose to develop a questionnaire and validate it in a group representing the study population. Validating the questionnaire took time, but gave results with a tested degree of relevance and authenticity for the studied population. As the pilot study also showed a much lower degree of awareness than expected, it was decided to include the total population of medical students rather than a sample. The questionnaire study population was therefore extended on the cost of conducting the in-depth interviews, as this study had the normal time and resource constraints. The modification to the initial study protocol may have created a weakness in the depth of the results achieved as exploration of issues arising from the questionnaire was not pursued in follow-up interviews. It is worth noting that an understanding of the nature, content and characteristics of “awareness” was achieved through the questionnaires and as such in-depth interviews might not have altered the findings of this study but just added more strength to the results.

Third, the questionnaire was developed and piloted by me. Although the questionnaire seemed to function well and had face validity when developed, content and/ construct validation would be needed to check its internal consistency and reproducibility of results.

Fourth, the change of venue from classroom based setting to utilization of clinical rotation groups may have allowed time to converse among the participants. From the results this seemed less likely as no two responses from the respondents’ were exactly similar in wording or phrasing.

Fifth, being a family medicine resident my positioning could influence the study participants and their responses. Being assisted by two voluntary research assistants who are medical students one at each participating university, I tried to minimize this. It is however neither possible nor desirable to eliminate the researcher's perspective as part of the data collection. In qualitative studies the researcher and the research participants are working together to develop the description

of the studied phenomenon, giving as much room for the participants' understanding and perceptions, but always limited by what the researcher is able to understand through clarifying questions. The fact that the results were significantly different from my own pre-understanding shows that I, to a large degree succeeded in giving room for the participants' understanding. My initial presuppositions fell through, for instance, that the low application rate for the positions of residency in family medicine could be explained by participants having negative perception towards family medicine. Instead, the study showed a profound lack of awareness and low exposures played a key role. Thus this presupposition is bound to change overtime as students get to learn about family medicine and hopefully get exposed to family physicians.

CONCLUSION AND SUGGESTIONS

There is a low level of awareness of the medical specialty of family medicine among undergraduate medical students in Tanzania. Even when aware of the existence of this medical specialty there is a severe misunderstanding and lack of knowledge of the concept of family medicine which might have contributed to the low uptake of family medicine residency positions at the Aga Khan University Dar es Salaam Tanzania.

There is need to formulate interventions aimed at raising levels of awareness of family medicine as well as improving the knowledge of what family medicine entails among undergraduate medical students in our local universities. This could be achieved by the Aga Khan University partnering/ establishing links with the other local universities to create awareness of family medicine either through exchange programs or having lectures on primary health care in these universities delivered by family physicians. The local universities should be encouraged and facilitated to establish family medicine departments. The departments would have family physicians participating in training of undergraduate medical students. Education on roles of family physicians and the impact (s)he can have in addressing the goals of primary health care should be taught at undergraduate level.

The government and the policy makers need to get involved especially in creating legislation that would recognise family medicine as a specialty in Tanzania. This would help address issues of practice as raised by the study participants. As many of the study participants had their knowledge about family medicine from the media, radio, television and other media might be able to aid in disseminating information on family medicine to the public and to the would be future doctors. This might be done through partnership with established family medicine departments such as the Aga Khan University family medicine department. The departments and the media could formulate health education programs that could be aired to the wider public audience as part of a corporate social responsibility; these would help create awareness on the existence of family medicine in Tanzania and at the same time providing health education and health promotion.

APPENDIX 1: Amended version of the questionnaire that was distributed

QUESTIONNAIRE: PERCEPTION OF FINAL YEAR UNDERGRADUATE MEDICAL STUDENTS ON FAMILY MEDICINE IN DAR ES SALAAM, TANZANIA

Date _____ Age _____ Male Female

Muhimbili University of Health and Allied Sciences Hubert Kairuki Memorial University

Part 1: Awareness

1. Have you ever heard of Family Medicine? Yes No

2. What comes to your mind when you hear about Family Medicines?

3. Have ever had any exposure to a Family physician? Yes No

If yes where _____

4. Where did you hear about family medicine from _____

Part 2: Perception

1. What comes to your mind when you hear the word 'family physician'?

2. If you could choose ONE health care provider, would you want a family physician? Please explain your response

3. What skills would you expect a family physician to possess?

4. How are family physicians different from other specialties?

5. Would you say Family Physicians have a role to play in Tanzania Health care system? Yes

No

If yes, what role?

6. How will you choose your future career? _____

7. Would you consider Family Medicine as your future potential career choice? Yes No

If yes why?

If no why?

8. In your view would you say Family physicians are Superior Inferior equal or complimentary to other medical specialties? (Please choose only one option)

9. **The researcher would wish to contact you in case more information is needed, would you be willing to be contacted? If yes please leave your cell phone number**

here _____

Thank you

<p>Has the ability to refer a patient to another professional</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. works with the patient within their own professional field of knowledge</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Able to deal with a wide spectrum of patient/client types</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. able to deal with only a narrow range of patient client types</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Tend to work in isolation</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. tend to work in a team</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Has a health education role</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. role is unrelated to health education</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Requires a high level of technical skill</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. Requires a high level of intellectual skills</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Acts as superior to other professionals</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. Treats other professionals as colleagues</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Cares for the persons general wellbeing</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. Cares for the patient only in relation to their specific disease context</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Considers their role as of secondary importance to doctors in other specialty</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. Considers their role of equal importance to doctors in other specialty</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Seeks out a high degree of involvement with the patient</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. Maintains a low degree of involvement with the patient</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Are generally outgoing and confident professionals</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. are generally shy and introverted professionals</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Demonstrate a sense of humor when undertaking their role</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. demonstrate a serious attitude when undertaking their role</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>
<p>Tend to be introverted and lack "get up and go"</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>	<p>vs. tend to be energetic and enthusiastic about their work</p> <p>0 1 2 3 4 5 6 7 8 9 10</p> <p>└───┴───┴───┴───┴───┴───┴───┴───┴───┴───┘</p>

APPENDIX 3: Information to the Participants

My names are Dr. Eric Aghan a third year resident in family medicine at the Aga Khan University Dar es Salaam. My research study is a qualitative type of study, which will be assessing perception (views and thoughts) of undergraduate medical students towards family medicine. The study also will aim at assessing the students' awareness of existence of Family Medicine. The ultimate aim is not to put the student into test but is to bring to fore the need to actively re introduce family medicine as the future of primary health care.

Participation in this study is voluntary, there is no monetary benefits neither are there any consequences of fail or withdrawal from the study. The information obtained will not bear the participants name or information that might lead to revelation of the participants.

Feedback on the final results of the study shall be communicated back to the participating institutions and also to the participants.

Please read the above information and feel in the consent form at the back

Thank you in advance

Dr. Eric Aghan

Family Medicine, Resident

The Aga Khan University DSM, Tanzania

Title of Project: PERCEPTION OF FINAL YEAR UNDERGRADUATE MEDICAL STUDENTS
ON FAMILY MEDICINE IN DAR ES SALAAM, TANZANIA

Name of Researcher: Dr. Eric Aghan Tel 0714961627

		Please tick to confirm
1	I confirm that I have read and understand the information sheet dated for the above study.	•
2	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	•
3	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my legal rights being affected.	•
4	I agree to take part in the above research study.	•

Name of Participant

Date

Signature

Name of Person taking consent

Date

Signature

APPENDIX 4: Primary category answers

Numbers in brackets after answers to the open ended questions are number of respondents expressing the same in different words

In perception, question 2 it says

- “Tackles family health problems(2)”

This means that two respondents answered almost the same:

- *A physician that treats diseases in a family as a whole*
- *A medical doctor or health care provider who specifically takes care of all the health related issues of family level*

These two answers were condensed in this appendix to “Tackles family health problems (2)

Gender Males 112(67%) Females 55(33%)

Ages 20-24.9= 59 25-29.9= 95 >30=13

1. Yes 78 No 89
2. Medical specialty devoted to providing comprehensive care for people of all ages in the community(6)
 - Practice of medicine in private sector (2)
 - Treatment of medical problems at family level (36)
 - Provision of medical care and family planning to given family (2)
 - Recent specialty that deals with internal medicine and paediatrics (2)
 - Private care of adult and children (4)
 - Certain family having a specific physician (12)
 - Specialty in general medicine (6)
3. Yes 28 No 84
 - Exposure-private hospital 2
 - NGO 1 -America 1
 - Home 15(relative or friend who is a family physician or resident)
4. Sources
 - a. Friends 10
 - b. Books 4
 - c. Internet 3
 - d. Media 11
 - e. NGO 1
 - f. Senior Doctors 3
 - g. TAMSA 1

PERCEPTION

- 2.

- Physician dealing with internal Medicine and paediatrics(5)
- Tackles family health problems(2)
- Doctor who treats holistically without choosing patient, sex neither disease(3)
- Deals with only particular families for counselling and treatment (33)
- Deal with particular families for over years treat them before they visit hospitals
- Professional personnel providing continuing and comprehensive health care to individual members in the family(2)
- Specific family having its own physician(3)
- Clinician providing primary health care to the family members of a particular household when need arises(2)
- Family doctor attending to special/wealthy families(5)
- I don't know(6)

3. Yes 68 No 8

Yes

- Can detect medical problems easily and work them out quickly(3)
- Ensures adequate, efficient and timely care 2
- Because of confidentiality(1)
- Secure family and guarantee their health(1)
- Easy access to him/her whenever there is a need (5)
- Because he/she is close to the family involved (3)
- To tackle all the disease which run in the family(4)
- Easy for health follow up compared to treatment by different doctors(2)
- Close to the family, knows family details hence would provide appropriate treatment (11)
- Manage and monitor family health and caring for the family health (2)
- Because She/he is a specialist would know and provide good care for the family as well as containing all important hereditary and chronic diseases(5)

No

- I don't understand difference between family physician and medical officer(7)
- Not important
- Limited to certain group of people

4. Skills

- Any other regular physician would have(4)
- Being able to provide services that don't necessitate hospitalization(2)
- Expert in all medical specialities(3)

- Hardworking, committed, understanding, endurance and smart(2)
- Should have both internal medicine and paediatrics(4)
- Address simple medical problems and diagnose the serious ones for further management in the specialised facilities(3)
- Knowledge on the primary family problems facing members commonly (2)
- Resuscitate patient in times of emergency(2)
- Should be able to diagnose, treat follow up and do disease prevention (2)
- Good communication skills, confident, hardworking, knowledgeable (1)
- Don't know (2)
- Excellence, compassion, honesty, responsible and committed (1)
- Affordable, open minded, and understanding(2)
- Disease prevention and health promotion(4)
- Good history taking and diagnosis(3)
- Expertise and professionalism(1)

5. How are FPs different

- Deal with general family health
- Aim at knowing disease trends in a particular family unlike other specialities (5)
- Deals with diseases of families while the others deal with different families
- Accountable for family health (5)
- Basic communicable disease among families (2)
- Broad range of skills contrary to specific speciality(2)
- Not different in knowledge but occupation (5)
- More close to the families (3)
- More skills on family diseases than others (3)
- First to diagnose disease and provide treatment
- Don't know (2)
- Easy follow up of client, knowledgeable of disease
- Privately based
- Deal with all ages, gender, diseases and every system of the body (2)
- FP have special clientele while the other can treat anyone who seek medical advise
- Different cause has 2 specialities (internal medicine and paediatrics)

6. Role in Tanzania

- Yes 68 No 12
- Many diseases will be managed at home and not in the hospital (12)
- I FP Can cover gap of many specialist
- To treat family on individual basis
- To promote community medicine

- Reduce morbidity and mortality (4)
 - Improve health of children and adult from family level (14)
 - Saving lives of family members (8)
 - Early disease detection and prevention of disease and health promotion at family and community level
 - Family planning, family health education on disease prevention and control
 - Helping people at family level
 - Attend to patient anytime they are needed to
 - Treatment and health promotion
7. Career choice
- What I enjoy from my clinical rotation (34)
 - Since I want paediatrics and internal medicine FM would be good
 - I'll choose based on my interest and skills(3) + Marketability (2)
 - Depends on the community needs (8)
 - From role models
 - Based on how easy it is and availability of funds
 - Depending on opportunity and needs
 - Based on subjects that I get high scores (7)
 - Career that serves people needs and lives
8. Would you consider FM as part of your career choice Yes 24 No 58
- Yes
 - i. Saves time to deal with family one by one (9)
 - ii. Increase source of income (6)
 - iii. Country needs more physician
 - iv. Interested with both internal medicine and paediatrics
 - v. Specific to families and can do other duties
 - vi. A needed field of medicine
 - vii. Good practise not tiresome and has small risks
 - No
 - i. Not interested (8)
 - ii. I don't understand how different it is from medical officer (6)
 - iii. No market for it, it is expensive and not affordable in Tanzania(12)
 - iv. Brings direct complaints to you if anything goes wrong even if not your fault
 - v. Only rich can afford
 - vi. I have bigger dreams (8)
 - vii. It is tiresome

viii. I don't want to attend to one family, I want to treat as many patients as possible (4)

ix. No clear policy in Tanzania concerning FM which would make practice challenging 4)

9.

- Superior 8
- Inferior 18
- Equal 44
- Complimentary 4

APPENDIX 5: Pilot results, category answers

Awareness

Demographics: Age in years: 28(2), 30, 24, 38, 33, 32, 34, 41 (range 24-41)

Gender: M7 and F2 (M-77.8%)

Q1 Yes 4 No 5 (No 55.6%)

Q2 –is important and every family should have information about it

- Profession that provides family all the essential health care services (2)

- Similar to home based care

- Deals with a single family and not the community

- Where there is enough physicians delivering health care to the family level

- Care provided to all patients and is a division of primary health care

- The medical education which must be known by family in order to prevent or treat diseases

before going to hospital

Q3 Exposure Yes 0 No 9s

Q4 Internet 4 (44.4%), Journals 2 (22.2%), Other Doctors 1, not heard 5 (55.6%) = (> 1 source)

Perception

Q1-Physicians who deal with all medical issues related to that particular family

- Physician who treat certain families (6 respondents)

- Reminds me of primary health care

- They are of great value as far as health is concerned

Q2-Yes 6 (66.7)

- prevention is better than cure (3)

- Early disease detection and intervention

- Easy to make follow up as they work with families

- Work close with the family, thus know more about the family

- No 3 (33.3%)

- Maybe expensive (2)

- will not know when I need one for care

Q3-degree in medicine

- knowledge about common diseases
- widely skilled
- early management of diseases, prevention and monitoring
- Cardiology
- Internal medicine and little surgical skills
- Medical degree, counseling skills and community medicine
- Preventive, curative and counseling skills

Q4- I don't know 2

- deals with few patients
- specializes more in family health problems (3)
- Mobile from family to family
- Deals with wide range of conditions
- Not a specialist

Q5 Yes 7 (77.8%)

- Provision of preventive and counseling and curative services (2)
- reduce queuing/patient complaints
- regular checkup of family members and proper follow up
- needed to run the primary health care efficiently
- will give the right data of diseases to improve on morbidity and mortality

No 2 (22.2%)

Q6 –something am interested in

- Need and community demand (4)
- Preventive (1)
- Available opportunities and attractiveness of the field

Q7 Yes 3 (33.3%)

- want to deal with the family
- want to practice preventive rather than curative (2)

No 5 (55.6%)

- Not interested in non-communicable field
- will be limited to family level and want to practice at community level

- It is easy to be an ordinary physician
- Tanzania cannot afford to pay family physicians
- I don't have enough information on family medicine

Q8 Superior 3 (33.3%)

Equal 5 (55.6%)

Complimentary 1 (11.1%)

APPENDIX 6: My pre-understanding of perception of final year UGMS on FM in Dar es Salaam, Tanzania

Family medicine is a medical specialty field that is concerned with provision of holistic, preventive and promotive care to the community. Family medicine is driven by family physicians who are specialist trained to provide all the above. Family medicine lays emphasis on patient centered approach to patient care, thus the doctor and patient work as partners in order to achieve their set agendas.

Primary health care is a model of health care provision that contains health education and promotion, disease prevention, early and appropriate intervention where disease has occurred as guiding principles. It also calls for community participation and ownership of their care, thus communities should be involved in diagnosing health issues affecting them, participate in search for solutions to this problems and implementation of the found remedies.

Family physicians are doctors who take care of family health, which is the basic unit of a community, they are holistic in there care and thus are involved in health promotion, health education and disease prevention. Family physicians are trained on specialized curriculum in order to be able to meet their obligation.

Where disease has occurred family physicians are involved in initial diagnosis and treatment of the condition appropriately thus restoring health. This early disease detection and early effective management is aimed at preventing disability from the illness, where disability has occurred family physicians are at the center of rehabilitation of the patient and his/her integration back to the society. They coordinate the care of the patient in order to attain their maximal performance and hence prevent further disability in this sense playing big role in secondary and tertiary prevention.

To achieve the above objectives the family physicians are expected to command a broad knowledge base, making them lifelong learners in order to stay current with modern and evidence based approaches, whether in health promotion or in disease and illness management. To be able

to create the above scenario family physicians are involved in research in order to come up with effective and cost friendly approaches to patient care, these researches are based on problems facing the community they work in.

Family physicians are expected to play leading role as patient advocates, thus they should be able to influence patient friendly health policies. They are expected to participate actively in development and implementation of appropriate health care models that are sustainable and that incorporate the community participation and ownership.

In order to produce doctors with all these qualities family physicians should be involved in training of future family physicians as well as training of other cadres of health care providers as family physicians are but a part of the wider health care provision team.

My “pre-understanding” (what did I expect before starting the project)

Family medicine deals with family health, family physicians are doctors who treat families they are generalist and not specialist and thus are inferior to other specialists. Family physicians are less knowledgeable compared to other specialists.

Family physicians are less paid compared to the work they are expected to deliver and thus less attractive to the young doctors. Some of the participants may not have heard of family medicine or family physicians

NB: This was my view before starting the data collection process. It was a view that I wrote down and shared with my methodology supervisor to be able to describe, reflect on and take into account researcher subjectivity in the analysis of the data.

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