



Full Report

The Enhancement of East African Universities' Contribution towards the Attainment of Millennium Development Goal 5- Improving Maternal Health



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EXECUTIVE SUMMARY

Background and Context

Improving maternal health was recognized by the international community as a key component of the United Nations 2000 Millennium Summit initiative to reduce worldwide hunger, poverty and disease. All participating countries agreed to work toward the eight Millennium Development Goals (MDGs) and Millennium Development Goal 5 (MDG-5) in particular, which focuses on reducing the global maternal mortality ratio by 75 percent by 2015 compared to 1990 rates.

According to recent estimates, exciting progress towards reducing maternal mortality has been made in many developing regions, including sub-Saharan Africa and Southern Asia where the majority of maternal deaths occur. Despite this important progress however, an estimated 358,000 maternal deaths occurred worldwide in 2008. Worse still, developing countries account for 99 percent, or 355,000, of all deaths. Sub-Saharan Africa and Southern Asia account for 87 percent of global maternal deaths, (313,000 deaths). It has also been estimated that, in sub-Saharan Africa, a woman's risk of dying from preventable or treatable complications of pregnancy and childbirth over the course of her life time is 1 in 31, compared to only 1 in 4300 in developed regions (United Nations, 2010).¹

Sub-Saharan African countries have much to gain from the realization and achievement of the MDGs. This takes the involvement of different stakeholders including universities. However, what role(s) are the universities in Sub-Saharan Africa playing in educating students about MDGs and, especially, MDG-5? Given that current and future Sub-Saharan Africa University students are considered to be the elites in their countries and will become decision makers and activists, a study on *the Enhancement of East African Universities' Contribution towards the Attainment of MDG 5* reveals that universities can, and should play a pivotal role in accelerating progress.

Methodology

The study was carried out among public and private universities in Uganda and Kenya in East Africa. Uganda has a total of 26 universities (6 public, 20 private), while Kenya has a total of 25 accredited universities (7 public, 18 private). Twenty-three (23) Ugandan universities and 24 Kenyan universities were surveyed in this study.

The first phase of study was a cross-sectional descriptive survey and employed a quantitative approach to data and methods. The study population comprised of: 1) representatives of departments or academic units including heads of departments, course coordinators, and/or senior lecturers (faculty) in the selected universities and, 2) final year undergraduate and graduate students from the selected university academic units and/or departments. Interviews were administered by trained research assistants and analyzed by an East African statistical team.

A second phase of study, and qualitative in nature was also undertaken targeting stakeholders as well as reviewing the curricula of selected universities. Data collection methods included data base review, curriculum review, key informant interviews, focus group discussions, workshops, think tanks and experts on policy development.

Summary of Findings

Findings of the baseline survey reveal that out of the total number of the participating students (1920), only 44.1% could mention the right number of MDGs and 47.7 % were able to mention the correct deadline for the achievement of the MDGs. Only 23.4% of the students were aware of both the number of the MDGs and deadline for their achievement. And only 45.7% of students were aware of MDG-5 (maternal health) and 45.2% of them reported having aspects related to MDG-5 in their university courses.

Of the 44% of students that confirmed that their course prepared them to handle maternal health aspects, the majority of them were females in health-related departments. The study also revealed that there is no specific focus on maternal health in non-medical courses. Even in the health-related programs the focus is on curative rather than preventative initiatives. This

implies, the contribution of universities to maternal health is confined to faculties that deal with medical or health training.

Of the few non-medical students who had knowledge on maternal health, most of them had knowledge on family planning issues rather than antenatal care, maternal morbidity and nutrition. The main sources for these health related knowledge are media i.e. radio/TV and newspapers.

Only 4.8% of students and 4% of lecturers indicated that universities have responsibility for fulfilling MDGs. The lecturers indicated that they could not identify a relationship between maternal health and the course they teach. The qualitative research further revealed that there is limited research conducted on maternal health in non-medical disciplines and limited community outreach except for programs where community outreach is a key component of the course.

Conclusions

There were large gaps in awareness regarding the Millennium Development Goals among East African students. There is little reported coverage of MDGs and MDG-5 related issues in seminars. The lack of coverage in seminars which address all of the MDGs, and maternal health issues in particular, points to a gap regarding dissemination of information in the institutions and their faculty.

East African university students believe that they are poorly prepared to address maternal health and nutrition issues. More students do feel prepared in the area of HIV/AIDS/sexually transmitted infections with at least a half reporting that they felt prepared in this area of health.

The role of media in educating the community about key developmental issues is very important and is not limited to individuals outside the university. As such, contributing to the knowledge of university students studying journalism is likely to have a great impact.

Recommendations

For countries of East Africa to proceed towards the global goal of poverty reduction by improving maternal health, East African universities need to offer enhanced course content and opportunities for their students to learn and become engaged in the realization of the Millennium Development Goals.

Different actions need to be undertaken which include a regular review of curricula that integrates MDGs into university programs. National governing bodies (such as the National Council for Higher Education or the equivalent in each country) can also ensure universities map out a clear path to ensure all students receive education and training about the Millennium Development Goals and, in particular, MDG-5.

In addition, universities need to become proactive in establishing collaborations with communities; prioritizing research relevant to the realization of the MDGs, and to MDG-5 in particular, providing adequate financial support for research related to the MDGs and especially MDG-5, as well as encouraging students and faculty to advocate for and to promote maternal health initiatives within their faculties and courses of study.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

Achieving the Millennium Development Goals (MDGs), especially MDG-5 concerning maternal health, remains a major challenge, particularly in developing countries.¹ Maternal and Newborn Health (MNH) coverage indicators remain poor despite the existence of a multitude of evidence based, affordable and appropriate interventions.² Both demand and supply side factors critically determine coverage, effectiveness of interventions and opportunities to optimize maternal health. The social determinants of maternal health include inequity, poverty, gender inequality, low education status and lack of respect for the human rights of girls and women – including their sexual and reproductive health and rights.^{3,4}

The World Health Organization (WHO) considers maternal health as the health of women during pregnancy, childbirth and the postpartum period. It identifies the major direct causes of maternal morbidity and mortality to include haemorrhage, sepsis, high blood pressure, unsafe abortion, and obstructed labour. Further, WHO stresses that, while motherhood is often a positive and fulfilling experience, for too many women it is associated with suffering, ill-health and even death.^{4, 5} In highlighting the importance of paying greater attention to maternal health, the UN Secretary-General said that, “We must do more for the teenage girl facing an unwanted pregnancy; for the married woman who has found she is infected with the HIV virus; and for the mother who faces complications in childbirth.”⁶

1.2 Millennium Development Goal 5

The MDG-5 aims to improve maternal health with a target of reducing the Maternal Mortality Ratio (MMR) by 75% between 1990 and 2015 – that is, it seeks to achieve a 5.5% annual decline in MMR from 1990. Globally, the annual percentage decline in MMR between 1990 and 2008 was only 2.3%. Among countries with an MMR ≥ 100 in 1990, it is evident that 30 countries have made insufficient or no progress, including 23 from Sub-Saharan Africa. The adult life-time risk of maternal death (the probability that a 15-year old female will die eventually from a maternal death cause) is highest in Sub-Saharan Africa (at 1 in 31) compared to 1 in 4300 in industrialized countries.

According to the WHO 2010 Maternal Health Report, none of the broad MDG regions was on track to achieve MDG-5, except Eastern Asia with an annual 5.5% decline in maternal mortality. Sub Saharan Africa, including Uganda and Kenya, was reported to make the least progress at 1.7% per annum.⁵

To attain a meaningful and concerted effort in achieving the MDG-5 goals, a consensus has been developed around a five-point checklist of policies and prioritized interventions to be provided through a health systems approach. This consensus resulted from several meetings held within the international development community during the first half of 2009.⁷ The five-point checklist identified the following:

1. Political and operational leadership and community engagement and mobilization;
2. Effective health systems with interventions in key areas such as comprehensive family planning advice, services, supplies, safe abortion services (when abortion is legal), antenatal care, quality care at birth, including skilled attendance and emergency obstetric and neonatal care, and postnatal care for mothers and babies;
3. Removal of barriers to access, with services for women and children being free at the point of use where countries choose to provide it;
4. Skilled and motivated health workers in the right place at the right time, with supporting infrastructure, drugs and equipment and a favourable legislative environment; and,
5. Accountability for credible results, that is, a health sector that is accountable to governments, the communities it serves, and funding sources.

In addition to this consensus, one of the key global strategies to improve women and children's health, launched by the United Nations Secretary General in 2010, seeks to catalyze action for renewed and enhanced commitment by all partners for adequate financing and policy formulation to improve maternal and child health services.⁸ This strategy calls for the development of research and innovation for partners to develop, fund and implement a prioritized, coordinated and innovative agenda for women and children's health issues.

1.3 Maternal and Newborn Health (MNH) achievements in Uganda and Kenya to date

The maternal mortality ratio (MMR) in Uganda is 435 deaths per 100,000 live births. The infant mortality rate (IMR) is 76 deaths per 1,000 live births and under-the-age-of-five mortality is 137 deaths per 1,000 live births. A maternal mortality ratio of 435/100,000 live births translates to about 6,000 women dying every year due to pregnancy related causes. In Kenya, the MMR is 560 deaths per 100,000 live births with 7,900 maternal deaths annually.⁷ Rates for infant mortality and under-the-age-of-five mortality are 55 and 84 per 1,000 live births, respectively.^{7,9} The 2010 WHO report puts Kenya among the countries that have not made much progress towards attainment of MDG-5.⁵

In relation to other causes of illnesses, maternal and child morbidity account for the highest disease burden in Uganda. The burden of diseases pattern shows that over 75% of life years lost due to premature deaths are due to ten preventable diseases. Perinatal and maternal conditions account for 20.4%, malaria 15.4%, acute lower respiratory tract infections, 10.5 %, and HIV/AIDS 9.1%. The common non-communicable diseases include hypertension, diabetes and cancer, mental illness, chronic and degenerative disorders and cardiovascular diseases.¹⁰

1.4 Role of partnerships in enabling progress toward the goal of MDG-5

In its publication “20 ways the World Health Organization helps countries reach the Millennium Development Goals” (2010), WHO states:

Our activities include setting prevention and treatment guidelines and other global norms and standards, and providing technical support to countries to implement them, as well as analyzing social and economic factors and highlighting the broader risks and opportunities for health. If countries are to sustain and accelerate progress towards the MDGs, people need equitable access to a health system that can deliver high quality services, where and when they are needed. WHO assists national authorities as they develop health policies and plans, and helps governments work with development partners to align external assistance with domestic priorities. We also collect and disseminate data on health so countries can plan health spending and track progress.¹¹

To reduce maternal mortality, MacArthur argues that while the solution to high rates of maternal death lies partly in the hands of the health system, it is also dependent upon the educational status of women and on countries' legal systems.¹² He further states that women need access to good care, but they also need an enabling legal environment to protect their rights, and their health needs must be recognized and respected by their partners, families, and communities.

This, in essence, provides various avenues through which universities can partner with, among others, communities to promote maternal health given the fact that universities have, over the years, been at the epicentre of training skilled personnel capable of advancing health, education and general socio- economic development.

1.5 MDG Knowledge Dissemination by Universities

MDG knowledge has been identified as a deficit at many levels of society including universities and the half way mark to 2015 already has passed. A baseline survey at the University of Cairo showed low levels of awareness about MDGs. Three quarters of the students sampled neither had knowledge of the eight MDGs nor of the efforts aimed at achieving these goals.

Higher institutions of learning are inactive participants in the implementation of the MDGs due to low, uncoordinated and fragmented efforts to integrate MDGs into university learning. In a study about universities that was conducted in Uganda and Botswana, it was established that universities lacked concrete MDG-focused programmes, have not promoted intellectual engagement about MDGs, have huge capacity gaps, and limited community outreach programmes and action research about MDGs.¹⁵

Generally, most African universities lack effective resources and have institutional limitations for knowledge enhancement, including MDGs. The failure of governments and international donors to recognize and promote the role that higher educational institutions could have in contributing to the knowledge and promotion of the MDGs has been another negative contributing factor to the universities' lack of involvement in the MDGs internationally.

Although this may be the case, "...universities are uniquely positioned between the communities and the governments they serve. They are at the core of societies - and often in

the rebuilding of broken ones as reflected by the MDGs".¹⁶ Their role in knowledge building and dissemination of MDGs cannot be underestimated. Processes to foster this have been initiated by the Association of African Universities including this research project.

1.6 Philosophy of maternal health education

Empowerment of women for pregnancy, birth and the transition to the new family dynamic should be at the heart of any programme focused on maternal health training, as well as reflected in the programme content, methods and assessment. It ought to be at the heart of any programme's maternal health training and reflected in all of the methods and strategies that define the programme of study. It is a professional duty and function of maternal health practitioners to uphold the well-being of the childbearing woman and her baby. They need to empower women to assume responsibility for their health and that of their families. The practitioners believe that pregnancy and childbirth is a normal life cycle event, occasionally it becomes complicated and results in a life threatening event. One of the values of practitioners is to have confidence in, respect for and trust in women and their capabilities in childbirth.¹⁷

The necessity to base maternal health programmes on a sound educational philosophy is highlighted by WHO.¹⁸ It is proposed that programmes should be based on an acknowledgement of the uniqueness of the individual woman and committed to a life cycle perspective of reproductive health of women and newborns. The student has to be in position to address the holistic needs of the woman in a sensitive and competent manner. The required competences (knowledge, skills and attitudes) should be geared towards giving care to women in pregnancy and childbirth and throughout their lifetime. The care needs to women's individual psychological, emotional, physical, social and spiritual needs. In the light of the above, the curriculum for maternal health training ought to address all the domains of learning which are cognitive, affective and the psychosocial.

Cognitive competences; Students need to be prepared to be creative and have a sound knowledge base and to be competent in clinical skills. This is particularly important when it comes to handling complicated situations.¹⁸ Critical thinking is encouraged and the student is particularly encouraged to learn from personal and other people's experiences.¹⁹ They are

ultimately expected to develop into effective managers of maternal health care. The challenge at their hands is to keep up-to-date with new knowledge.

Affective competences: The programme must strive to prepare individuals who will be caring practitioners, ready to undertake advocacy for women and children at various levels. They need to work in close partnership with the close family members of the mother to promote a safe and satisfying experience of childbirth and motherhood. It is vital that the interest and enthusiasm of practitioners is maintained by the training.²⁰

Psychomotor competences: This constitutes the commonly needed competences in clinical experience in the full range of health care service settings. It mainly rotates around effective life-saving skills during the labour and childbirth and providing comprehensive obstetric care such as surgical management of complications.¹⁸

1.6.1 Teaching/learning approaches

Resources for teaching and learning; besides the traditional resources such as classrooms, seminar rooms, library, audio-visual aids, models, charts, midwifery and obstetric equipment and skills-learning laboratory, ICT is an important asset to the teaching and learning environment. It supports both teacher-directed and student-self-help learning. It provides opportunity for students to access to material and resources via the Internet, while remaining in the community to acquire clinical practice experience. Relevant materials for maternal health could be accessed from World Health Organization sources.²¹

Student-centered approaches; in maternal health training, students need to be active participants in the learning processes. This could be promoted through; case studies, group work, seminar presentations, experiential learning (e.g. role-play, simulation) workshops, projects and problem-based learning. The latter is one of the central pillars in maternal health because it uses real-life situations as a stimulus for problem-solving.^{22,23,24,25} It enables teachers and students to share/evaluate insights and to develop plans jointly. The procedure enables students to seek out the information from teachers/clinical supervisors.²⁵ Where appropriate, models are initially used to learn skills which are later transferred to clinical settings. In order to develop critical thinking and analytical and problem-solving skills among students of

maternal health it is imperative to adopt student-centered learning approaches. It enables students to reflect on their practice, develop into life-long learners capable of furthering further their learning. Students seek out the information from teachers/clinical supervisors.²⁵

Reflection; involves learning from experience through a cyclical process.^{26,27,28} It calls for keeping of reflective dairies during clinical practice and reviewing patterns of behaviour of individuals that can be critically discussed in groups. Reflection as a method enables learners to appreciate individual's social-emotional response patterns. It can be promoted during case study work and other classroom activities.²⁹

1.7 Curricula and maternal/reproductive health

The introduction of curricula relating to maternal health (and in its broader context of reproductive health) into multiple areas of study within the university context is an important step in ensuring that the issue is being discussed and studied by a broad group of individuals. There was limited information in the literature about the content of reproductive health training in academic programs across Africa and even the world.

Still, there are some institutions which are making pioneer initiatives in this area. Many of these initiatives are not documented, especially in the formal literature. Interestingly, the University of Ibadan (Nigeria) has begun an initiative to introduce reproductive health as a course within the university for all students in that institution. This was reported in the national newspaper, the Daily Independent (November 2010).³⁰ This ground breaking move towards including the entire student body in focusing on issues of reproductive health is revolutionary for West Africa. No other similar initiative has been documented or published in East Africa. The goal of the program at Ibadan is aimed at reducing the prevalence of HIV/AIDS in Nigeria. It is sponsored by USAID as part of the Medical Education Partnership Initiative (MEPI). The focus of the program is to be a comprehensive package leading to positive behavioural changes for undergraduate students. The course is anticipated to be part of the academic calendar of the second semester of the academic year.

There are multiple models and resources for developing curriculum for undergraduate and continuing medical education training for health workers. Some guiding principles for these

curricula include the need to have a multidisciplinary approach cuts across issues such as gender and adolescent reproductive health, the requirement for training to be case-based learning and to include training that incorporates both prevention and treatment of reproductive health diseases.³¹ Other researchers have evaluated the effectiveness of reproductive health or HIV related curricula using standardized and proven guidelines for curriculum based reproductive health and HIV education programs.³²

CHAPTER TWO: RESEARCH PROTOCOL AND METHODOLOGY

2.1 Objective

The study was done in two phases. The first phase of the study focused on university faculty and students in Kenya and Uganda to determine their level of knowledge about the Millennium Development Goals and about Millennium Development Goal 5 in particular, how that knowledge is being disseminated, their access to skills training and finally their attitudes towards maternal health.

Specifically, the first phase of research provides baseline data on:

1. curriculum content;
2. level of student knowledge; and
3. extracurricular learning opportunities such as workshops about MDGs and MDG-5 in particular.

The second phase, a qualitative survey was also undertaken to evaluate the contribution of universities towards the attainment of MDGs and MDG 5 in particular. The specific objectives were to:

1. Identify the gaps, hindrances and opportunities for the universities to contribute and promote MDG-5 (maternal health).
2. Provide recommendations for strengthening the development of policy frameworks among East African Universities and key stakeholders on maternal health.

2.2 Methodology

The study was carried out in universities (private and public) in Uganda and Kenya, situated on the eastern coast of Africa. Uganda has a total of 26 accredited universities (6 public / 20 private) with 23 participating in this survey, while Kenya has a total of 25 accredited universities (7 public / 18 private) and 24 universities were surveyed. Similar to Uganda, the majority of Kenya's universities are located in the central region. The number of academic units or departments in each varies by institution and country.

2.2.1 Research design

The baseline survey was a cross-sectional descriptive survey employing a quantitative approach to data and methods in the analysis. Quantitative data was primary and was collected through interviews at the selected universities. Qualitative research was done in phase two using qualitative approaches to data collection and analysis.

2.2.2 Study population and sampling

The study population included: 1) representatives of departments or academic units in the selected universities including heads of departments, course coordinators, and senior lectures; and, 2) final year undergraduate and graduate students from the selected academic units and/or departments. The calculated sample size (n) of final year students, adjusted to account for an 83% response rate (r), 95 percent confidence level ($Z^{\alpha/2}$), and 3.2% relative standard error (d), while accounting for design effect ($deff$) due to stratification, was estimated using the computational formula:

$$n = \frac{z^2 pq}{d^2} * deff * \frac{1}{r} = \frac{(1.96^2 * 0.5 * 0.5)}{0.032^2} * 2 * \frac{1}{0.83} \approx 2259$$

where $p=.05$ since no information is known from prior similar studies on the subject. A factor of $deff=2$ was adopted from the standard practice where no estimates are available.

A multi-stage stratification sampling was carried out in the following stages: 1. country of residence (Uganda versus Kenya); 2. universities' foundation body (private versus public); and, 3. discipline area of academic unit (Arts versus Sciences). Due to the difference noted in the number of private and public universities in Uganda and Kenya, different sample sizes of students were drawn. Lists of universities by foundation body and academic units were obtained to facilitate sampling. In Uganda, a total of 23 universities were randomly selected (17 private vs. 6 public); from a list of departments, 8 (4 Science vs. 4 Arts) were randomly selected from which 6 students were selected resulting a total of 24 students for each discipline in each university.

Thus, from the selected number of universities in Uganda, a total of 816 and 288 students were interviewed in the private and public universities, respectively. The number of students in the

Kenyan universities as per the private versus public differential was 816 and 336, respectively. Students from the various university departments were drawn from various courses of graduate and undergraduate disciplines with key emphasis on gender distributions. Table 2.1 presents a summary of the number of students interviewed in each country by university foundation body and discipline.

Table 2.1 Student sample size distribution by country and foundation body

University Location				
	Universities	No. of students per discipline		Students Interviewed
		Science	Arts	
Uganda				
Private	17	24	24	816
Public	6	24	24	288
Total	23			1104
Kenya				
Private	17	24	24	816
Public	7	24	24	336
Total	24			1152
Overall Total				2256

From each of the selected departments or academic units, a representative was identified and was interviewed, making an overall total of 365 department representatives in this part of the sample. In instances where there were no more than 4 departments in a faculty, the department heads were interviewed.

For the qualitative study, the sampling used in the baseline survey was followed except that those to be interviewed were purposively selected on the basis of the baseline survey findings and also targeted population. Students and lecturers from those universities whose baseline survey findings raised need for further investigation. It is those universities that are at the lower or higher end of the stratum that is they seem to be doing a lot or little with regards to

maternal health. In addition to university level respondents, purposively selected alumni, policy makers from the ministry of education and the National Council for Higher Education (regulating body) were also interviewed.

2.2.3 Scope of the survey

Three main roles of a university were used as the basis for the survey themes. These university roles are: 1) training, 2) research, and 3) community outreach. The baseline survey collected information concerning: 1) knowledge of MDGs, particularly focusing on MDG-5; 2) how knowledge is disseminated about MDGs including research and publications; 3) skills training of students through education/teaching, particularly focusing on maternal health issues; and, 4) attitudes of students and faculty about maternal health issues.

The qualitative study collected data concerning the gaps, hindrances and opportunities for the universities to contribute and promote MDG-5 (maternal health) and also to provide recommendations for strengthening the development of policy frameworks among East African Universities and key stakeholders on maternal health.

2.2.4 Data and instruments

Data was collected through self-administered questionnaires with department representatives (department tool) and students (student tool) from the selected academic units or departments, using pre-designed questionnaires together with an interview guide. Prior to the data collection, the instruments were pre-tested, to ensure their validity and reliability. The pre-testing was conducted using a similar population (representatives of academic units or departments and students). Internal consistence or reliability of items adopted for the latent construct in the student tool (for example, attitude towards maternal health issues) was achieved following the Cronbach's Alpha test³³; a high estimated alpha value ($\alpha \geq 0.7$) during the pre-test and final evaluation stages implied internal consistency or reliability of items used for the construct. For the qualitative study, data was collected by interviews using interview schedules and also literature especially curricula.

2.2.5 Data collection and management

Data collection, using the department and student tools, was carried out by trained research assistants working under the direct supervision of field supervisors who were charged with cross checking for any errors, inconsistencies, and missing data. The principal investigating team assumed overall supervision of the data collection exercise.

During the data collection, the heads of department in the selected universities acted as the contacts for the respective institutions and guided the research assistants in obtaining graduate and undergraduate students from the various disciplines. Self-administered questionnaires were given to the faculty and students in each department, based on the sample size allocation. Data were cleaned, coded and entered in to STATA 10.0 for analysis.

The qualitative study used a number of data collection methods including university data base review, curriculum review, key informant interviews, focus group discussions, workshops, think tanks and working with a policy development expert.

2.3 Data analysis

A quantitative approach to data analysis was undertaken and completed in 3 stages. First, a univariate descriptive statistical analysis, using frequencies and proportions, was generated to enhance background variables and key outcomes, using frequency tables and graphs. This provided a description of the samples and their responses to specific questions.

Second, correlations were tested between university background variables (country of residence, foundation body (public vs private), and arts versus science differentials) and respondent background characteristics (age, sex, and graduate versus under-graduate variations) by selected outcome indicators. The data was presented using cross-tabular analysis and associations established using the Pearson Chi-square statistical test. Associations were established at the 5% level ($p < 0.05$), unless otherwise stated.

Summative scales (indexes) were generated from five-point Likert scales³⁴ to assess the knowledge and attitude of faculty and students. Measures of central tendency and dispersion were calculated. Associations with background variables were established using the Mann-

Whitney test³⁵. Qualitative data was analysed using content analysis and integrated into quantitative data.

2.4 Ethical consideration

The study was approved by the national research governing bodies for Uganda and Kenya with permission being obtained to carry out the study in the respective universities. Informed consent to participate in the research was obtained from the department as well as participating individual students.

2.5 Limitations

The study was faced with a number of limitations. The following were the most important:

1. although there are various sources of information on MDGs, the study limited its scope of inquiry to universities as the source of MDG knowledge;
2. although attitudes about maternal health issues are not solely the result of formal university learning experiences, this study restricted its focus to those formal opportunities provided within the university context;
3. recall bias can distort perceptions of past experiences; and
4. sampling limitations may have produced a response bias.

CHAPTER THREE: PRESENTATION OF FINDINGS

3.1 Data sources

Of the students invited to participate in the survey, 1920 responded (85.1%); 197 (54.0%) faculty responded. In the analysis, the students were designated as the primary data source; however, faculty responses were often referred to for clarification. Both responses captured characteristics as age, sex, type of program/department, country of residence and the university foundation body.

The profile of student respondents was: below 30 years (83.2%), undergraduate (83.9%), Christian (90.2%), male (56.2%), 49% Ugandan, and 51% Kenyan.

By comparison, the department representatives were predominantly males (71.1%), with an academic qualification at the master's level (65.5%). More than half of students and department representatives were from private universities while 22.9% of faculty respondents had doctoral degrees.

3.2 Level of knowledge about Millennium Development Goals (MDGs)

Of the 1920 students, a total of 1484 (77.3%) reported having any knowledge regarding MDGs. Of these 1484 students, 44.1% ($n = 654$) were able to identify the right number (eight), while 47.7% were able to identify the correct deadline for their achievement. Overall, 450 (23.4%) (95%, CI 21.5 – 25.3) were aware of both the right number and correct deadline for the achievement of the MDGs. A cross-tabular assessment of knowledge of MDGs, including right number and deadline for achievement, by student characteristics resulted in a significant association with type of program ($\chi^2 = 13.7$, $p < 0.01$); students enrolled in master's programs were more likely to know about the MDGs.

Regarding the specifics of MDGs, the students mainly mentioned issues directly relating to eradicating extreme poverty and hunger (53.7%) as well as universal primary education (54.3%). 42.7% of students knew about MDG-5 (maternal health). No significant variations by country and university foundation body (private or public) were noted in the results ($p > 0.05$).

3.2.1 Level of knowledge about MDG-5 Improving Maternal Health

Students' knowledge of MDG-5 was correlated to the characteristics of sex, program, country of residence, university foundation body and age of the student. Table 3.1 presents a cross-tabular analysis of the variables and the association evaluated using the chi-square statistical test. With the exception of age and type of program registered for by the student ($p < 0.05$), the rest of the variables did not yield a significant association with knowledge of maternal health. Students enrolled in Master's program (53.3%) and those above 30 year of ages (51.4%) were most likely to be aware of MDG-5.

Table 3.1 Knowledge of MDG-5 by student characteristics

Characteristics			
	n (%) (N=1484)	Knowledge of MDG-5 (%)	
		Yes	No
Sex			
Male	886 (59.7)	40.5	59.5
Female	598 (40.3)	44.7	55.3
$\chi^2 = 2.4, p = 0.114$			
Program			
Undergraduate	1223 (82.4)	39.8	60.2
Master's	261(17.6)	53.3	46.7
$\chi^2 = 15.9, p = 0.000$			
Residence			
Uganda	718 (48.4)	41.5	58.5
Kenya	766 (51.6)	42.8	57.2
$\chi^2 = 0.2, p = 0.608$			

(table continued)

Table 3.1 Knowledge of MDG-5 by student characteristics (continued)

Foundation body	n % (N=1484)	No (%)	Yes (%)
Private	1071(60.0)	42.0	58.0
Government	413 (40.0)	42.6	57.4
$\chi^2 = 0.1, p = 0.834$			
Below 24	745 (50.2)	40.9	59.1
Age	(N 1484)	Yes	No
24 – 29	349 (23.5)	40.7	59.1
30 Above	257 (17.3)	51.4	48.6
Missing Data	133 (9.0)	N/A	N/A
$\chi^2 = 9.4, p = 0.009$			

3.3 Information about maternal health presented to students

3.3.1 Curricula

Students were asked whether or not their courses contained aspects or modules that were directly related to MDGs in general and MDG-5 in particular. About 65% of students reported having aspects related to MDGs, while 45.2% reported aspects related to MDG-5. Table 3.2 presents results of coverage of maternal health issues in students' courses by type of department, university foundation body and registered program.

Table 3.2 Maternal health issues in students' courses by characteristics

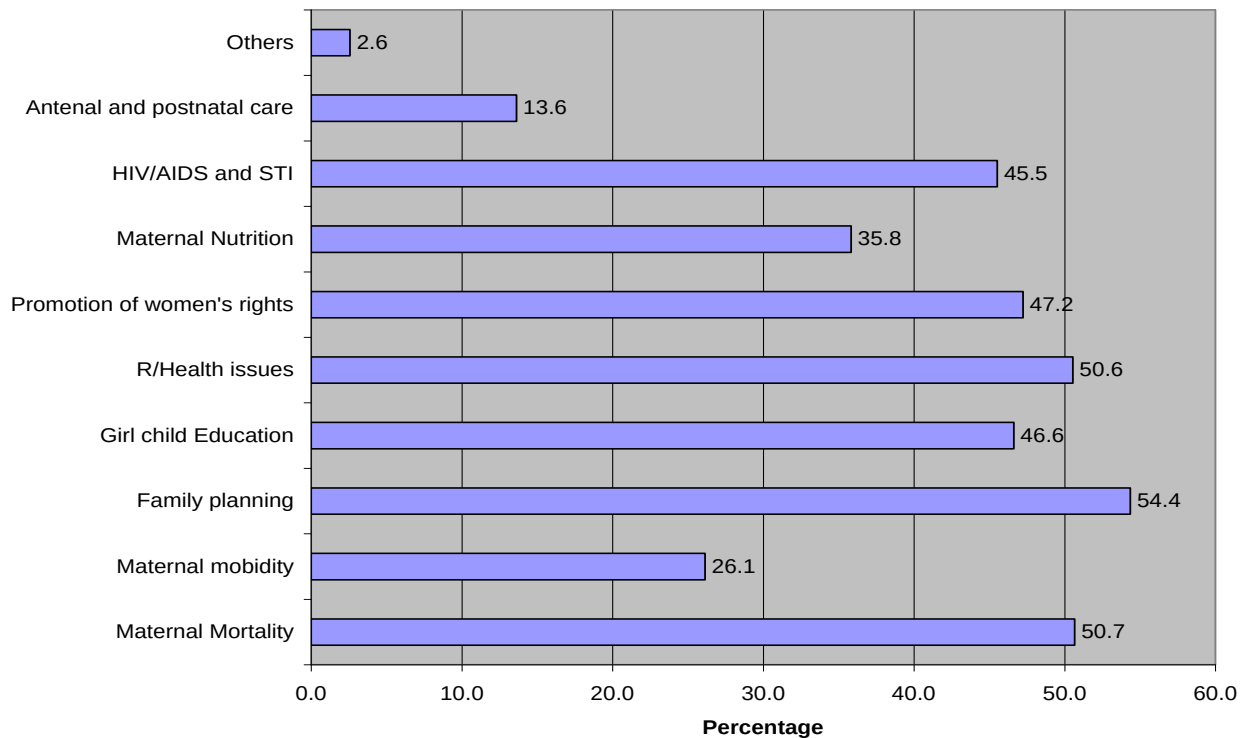
Characteristics			
	n (%)	Existence of MDG-5 issues(%)	
	N= 1920	Yes	No
Department			
Medical	320 (16.7)	60.6	39.4
Non-medical	1561 (81.3)	39.7	60.3
N/R	39 (2.0)	-	-
$\chi^2 = 47.3, p = 0.000$			
Program			
Undergraduate	1610 (83.9)	43.7	56.3
Master's	310 (16.2)	39.4	60.6
$\chi^2 = 2.0, p = 0.155$			
Residence			
Uganda	941 (49.0)	42.7	57.3
Kenya	979 (51.0)	43.3	56.7
$\chi^2 = 0.1, p = 0.794$			
Foundation body			
Private	1391 (72.4)	42.8	57.2
Government	529 (27.5)	43.7	56.3
$\chi^2 = 0.1, p = 0.724$			

In the assessment of the coverage of maternal health issues by student characteristics, significant association was established with the type of department ($\chi^2 = 47.3, p < 0.01$). A higher proportion of students reporting the existence of maternal health related content in their programs were those enrolled in the medically related departments (60.6%) (see Table

3.2). Further, the results run counter to findings from the department survey where a significantly higher proportion of representatives from Kenyan universities reported having maternal health issues incorporated into their courses than did Ugandan university representatives. ($p < 0.05$). No significant variations in the response rate regarding the existence of maternal health issues in students' course were noted by department representatives in relation to other characteristics (private vs. public and science vs. arts) ($p > 0.05$).

The details of maternal health issues reported to be handled in courses, according to the students and reported in Chart 3.1, were family planning (54.5%), maternal mortality (50.7%) and reproductive health issues (50.6%). Key issues such as maternal nutrition (35.8%), maternal morbidity (26.1%) and antenatal and postnatal care (13.6%) were least reported. The department representatives reported the following about issue representation in courses: reproductive health and maternal nutrition (82.8%); family planning (81.2%); and, maternal mortality (79.7%). HIV/AIDS and STIs (3.8%) and antenatal and post natal care (14.1%) were least reported.

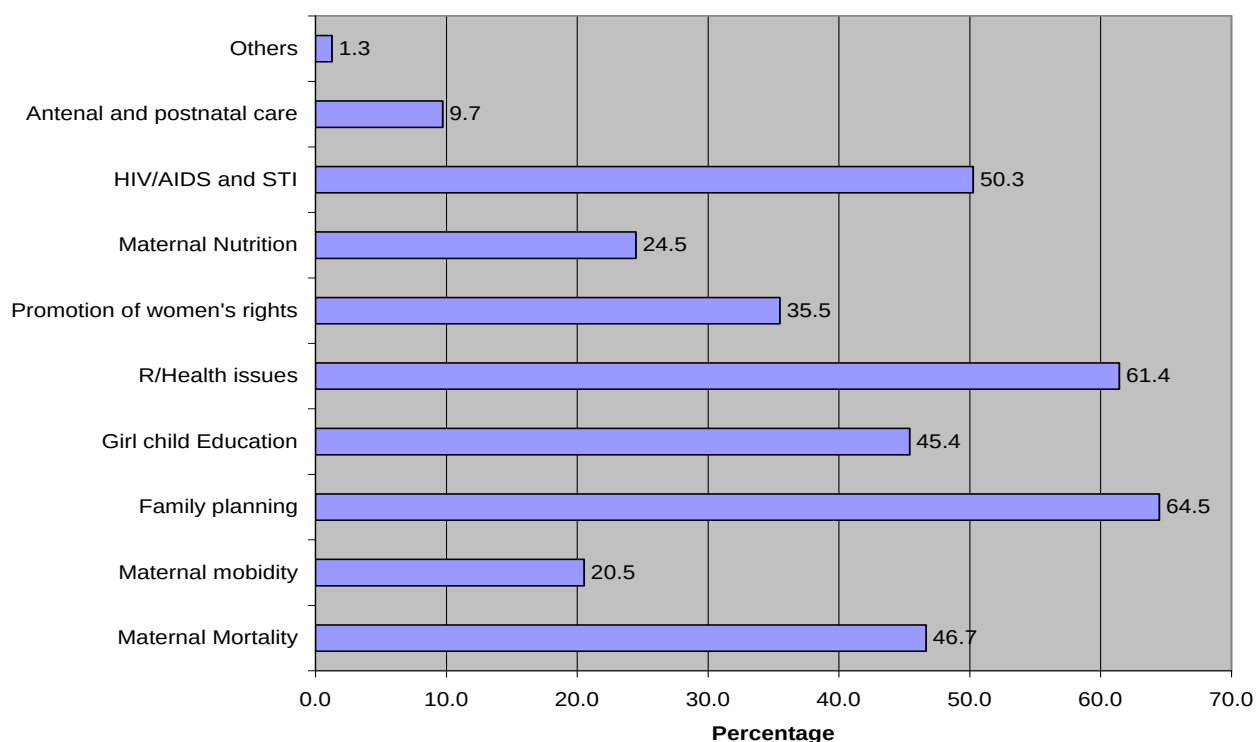
Chart 3.1 Maternal health issues in courses (according to participating students)



Almost half of the 1920 students who responded (49.7%; n = 959) reported attending a seminar or workshop organized by their respective universities or departments. Of these 959 students, 23% (n = 442) reported attending seminars or workshops with aspects directly related to MDGs while, only 17.2% (n = 330) reported that the seminars or workshops were directly related to maternal health issues.

The details of maternal health issues, presented in Chart 3.2, reveal family planning (64.5%), reproductive health issues (61.4%), STI including HIV/AIDS (50.3%) and maternal mortality (46.7%) as the key maternal health content in the seminars organized by the universities or departments.

Chart 3.2 Maternal health issues addressed in workshops/seminars

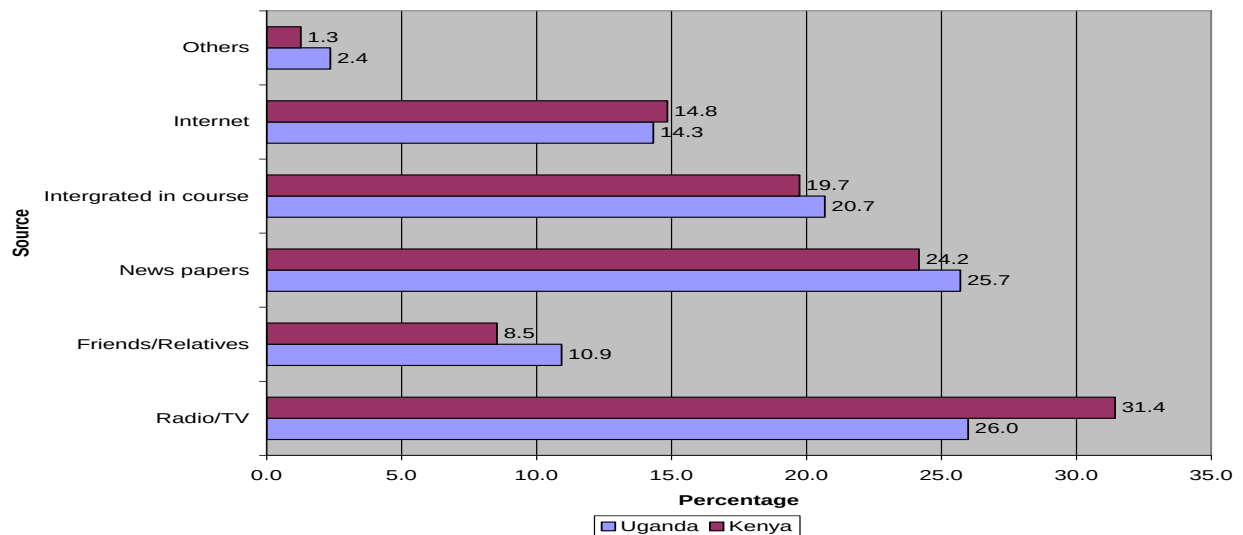


From a total of 171 heads of departments, 90 (52.6%) confirmed that there were seminars organized for the dissemination of research findings in the department, and of these, 36 (40%) confirmed that the seminars held were particularly related to maternal health issues. A comparison by type of departments showed that a higher proportion of the heads from the science based department, 58.5% versus 24.5%, reported seminars including topics related to maternal health (Pearson $\chi^2(1) = 10.7815$ Pr = 0.001). There were significant differences in these reports between countries and foundation bodies. The majority of the heads of departments mentioned that students were the target population (89%) of the seminars; 69.0% reported staff, 50.7% reported university, and 18.3% reported the community as the primary targets for the seminars.

3.3.2 Media

Students were asked to give information regarding their source of information about MDGs. The major sources of information about MDGs were radio/TV and newspapers (see Chart 3.3).

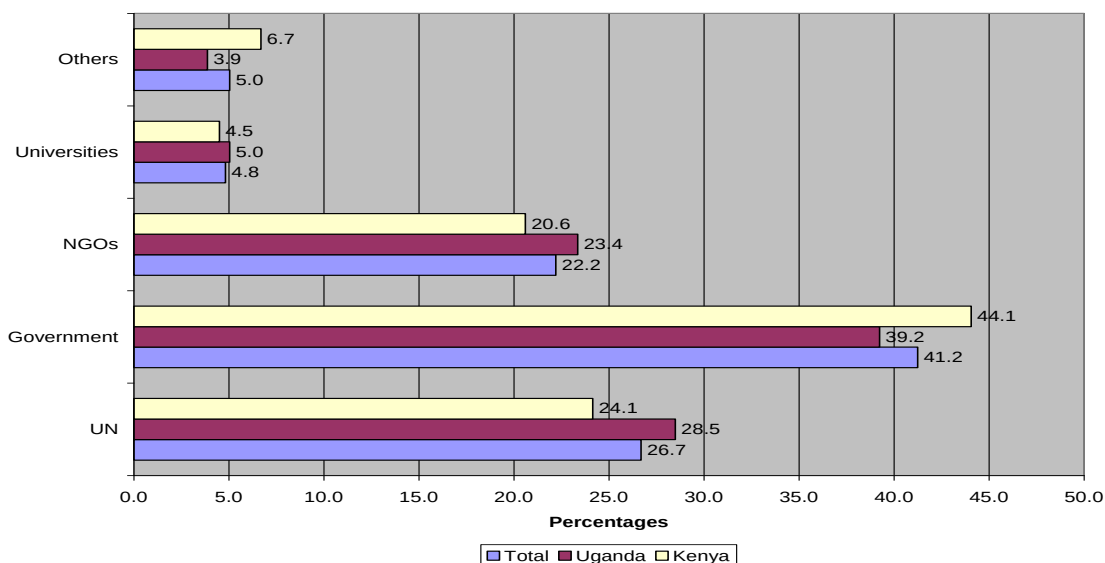
Chart 3.3 Source of information on MDGs for participating students



3.4 Responsibility for fulfilling Millennium Development Goals

Both the student and department tools asked questions regarding who should be responsible for fulfilling the MDG objectives. A small proportion of students (4.8%) and department representatives (9.5%) reported this was part of the university's responsibility (See chart 3.4). There was no significant variation in response by country of residence ($p > 0.05$).

Chart 3.4 Responsibility for fulfilling MDG goals



Note: NGO = Non-governmental organizations, UN = United Nations

3.5 Universities and MDG-5

3.5.1 University focus on maternal health issues

The contribution of the universities towards student knowledge of maternal health was evaluated on a five-point scale where a value of 1 endorses hardly any information while 5 denotes a high level of knowledge acquired from the institutions. In the analysis, a pooled average of 2.8 was obtained, reflecting a moderate contribution of the institutions towards knowledge of maternal health.

Results in Table 3.3 showing the average score for each issue in maternal health, confirms these maternal health focus areas as: HIV/AIDS and STI, promotion of women's rights, reproductive health issues, girl-child education and antenatal and postnatal care. Further assessment of this variable by students' characteristics, using the Kruskal-Wallis test, yielded no significant variations ($p > 0.05$).

Table 3.3 Summary of students' perception of the universities' contribution to their personal knowledge of maternal health issues

Importance of Maternal Health Issues	Min	Max	Mean
HIV/AIDS and STI	1	5	3.4
Promotion of women's rights	1	5	3.2
Reproductive health issues	1	5	3.1
Girl child education	1	5	3.1
Antenatal and postnatal care	1	5	3.1
Family planning	1	5	2.6
Female genital mutilation	1	5	2.5
Maternal mortality/morbidity	1	5	2.4
Maternal nutrition	1	5	2.2

3.5.2 Student knowledge about maternal health issues

Nine content questions relating to maternal health were asked to assess the students' knowledge about basic maternal health issues. In the analysis, a pooled score of 9 implied knowledge of all of the nine items. A median score of 6 was obtained (ranges 0 -9), pointing to moderate levels of reproductive health knowledge. Details are presented in Table 3.4.

Table 3.4 Students' knowledge of maternal health issues

Maternal health issues	% correctly identified answer n=1920
Advantages of delivery in health facilities	90.3
Disadvantages of unsafe abortions	72.3
Recommendations for HIV/AIDS positive mothers	68.5
Treatment and advice needed during postpartum check-up	68.0
Required check-up tests for pregnant women	67.8
Side effects of pregnancy	60.0
Minimum recommended ANC visits	40.3
Child spacing regulations	30.8
Strategies for malaria reduction in pregnant women	16.9

Examining the generate index, variations in the level of knowledge across students' characteristics of age, sex, program registered for, country of residence and medical vs. non-medical type of department, was evaluated using Kruskal-Wallis test. With the exception of age ($p > 0.05$), significant differences were noted in relation to knowledge of maternal health for the rest of the variables (sex, country, department type). Students correctly identifying

maternal health issues were female, enrolled in master's programs, in Kenyan institutions and in medical types of departments. Females had more knowledge than men; students in health/medical sciences demonstrated more knowledge than those in other types of programmes.

3.5.3 Student attitudes towards maternal health issues

Knowledge of maternal health issues is intended to change attitudes of the students and, ultimately, produce more sensitive practitioners. Therefore, we examined students' attitudes toward maternal health using of a five-point Likert scale comprised of nine items. In the analysis, summative and average indices relating to students' attitudes were evaluated.

Students scored an average of 4.2, indicating a relatively positive attitude towards maternal health issues. Using the average generated index, variations in attitudes towards maternal health aspects were evaluated by student characteristics. Results of the assessment, using the Kruskal-Wallis test, illustrate significant differentials in attitude by sex and program of registration ($p < 0.05$); students with a highly positive attitude were females and enrolled in Master's courses. There was no major variation by age and country of residence. The details of items adopted in developing the index, presented in Table 3.5, identify statements about the issues. The statements were strongly endorsed by many respondents including emphasizing girl-child education (90.3%), men accompanying their wives for ANC (88.3%), discouraging female genital mutilation (88.1%), the impropriety of men beating their wives (83.9%), and the right of unmarried women to learn about sexual matters (90.7%).

Table 3.5 Students' attitude towards maternal health issues

Students' attitudes towards maternal health issues	Response (%)		
	U	A	SA
Unmarried women should be allowed to learn about sex matters	1.9	19.5	71.2
It is possible to prevent women from dying at child birth	10.2	23.9	51.1
Men should accompany their wives for ANC	4.4	35.4	52.9
Men should accompany their wives during child delivery	18.9	24.7	41.9
TBAs are not skilled enough in handling deliveries	14.7	36.8	25.3
Health workers in some hospitals are not skilled enough in handling expectant mothers	14.3	52.0	19.5
Girl child education should be given priority	2.7	34.2	56.1
Men beating their wives is improper and should be prosecuted	4.2	24.9	59.0
Female genital mutilation should be discouraged	4.2	15.5	72.6

Note: U – Not-sure, A- Agree, SA – Strongly Agree TBA = Traditional Birth Attendant

3.5.4 Skills/abilities in maternal health care

Students were asked whether their course had prepared them to handle any maternal health issues. Over 44% (95%; CI 41.2 – 46.1) of students were in agreement with the assertion. According to results in Table 3.6, significant variations in opinion were noted for sex and type of department where student is enrolled ($p < 0.05$). Students reporting that their course had prepared them to handle maternal health issues were female (46.5%) and those enrolled in medical type of departments (57.2%).

Students noted particular skill deficiencies in the areas of antenatal care (only 13.7% felt prepared) and of maternal morbidity (only 22% felt prepared) (see Table 3.6). With respect to the ability to address the issue of maternal nutrition, students also endorsed having received little skill training with only 37.4% claiming to be well prepared by the university compared to at least half of the students feeling prepared in the area of HIV/AIDS/STI.

Table 3.6 Skills/abilities by student characteristics

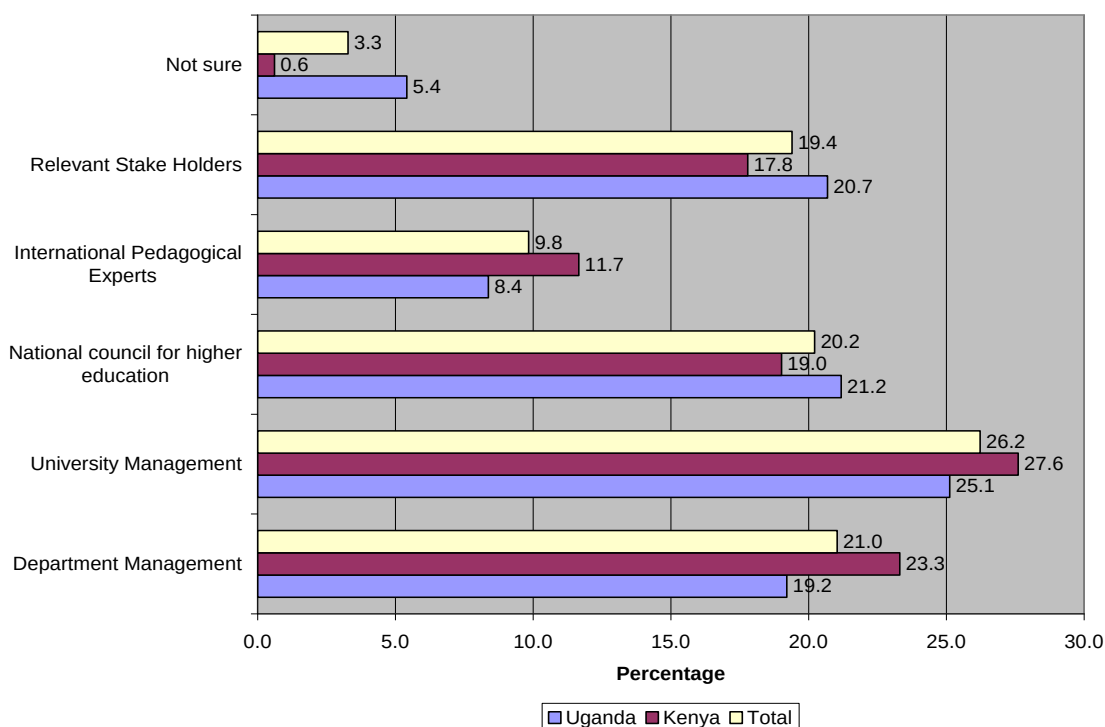
Characteristics	Whether course prepared student to handle maternal health issues (%)		
	n (%) N=1920		
		Yes	No
Department			
Medical	320 (16.7)	57.2	42.8
Non-medical	1561 (81.3)	41.6	58.4
Unknown	39 (2.0)		
$\chi^2 = 26.0, p = 0.000$			
Program			
Undergraduate	1610 (83.8)	44.1	55.9
Master's	310 (16.2)	42.9	57.1
$\chi^2 = 0.1, p = 0.698$			
Residence			
Uganda	941 (49.0)	45.2	54.8
Kenya	979 (51.0)	42.7	57.3
$\chi^2 = 1.2, p = 0.276$			
Foundation body			
Private	1391 (72.4)	44.6	55.4
Government	529 (27.6)	42.2	57.8
$\chi^2 = 0.9, p = 0.340$			
Sex			
Male	1079 (56.2)	41.9	58.1
Female	841 (43.8)	46.5	53.5
$\chi^2 = 4.1, p = 0.044$			

3.6 Curricular revision possibilities

In order to assess the possibilities of incorporating aspects of the MDGs into their curriculum, the department representatives were asked questions relating to the review process of curriculum content. Slightly more than half (52.2%) of the department representatives affirmed having reviewed content in the past four years while 12.7% indicated that the curriculum was currently under review. There were no significant variations regarding review processes by discipline area (science vs. arts) or country of residence ($p > 0.05$).

The department representatives were further requested to identify the persons they consulted with during the curriculum review process. The results show that a number of persons or units were consulted; however, the most predominant were departments and universities, followed by relevant stakeholders and the National Council for Higher Education (see Chart 3.4).

Chart 3.4 Institutions consulted during the curriculum review process



3.7 Research dissemination through workshops/seminar

Dissemination of research information about MDGs using seminars and/or workshops organised by the respective universities or their academic units focusing on maternal issues, was evaluated. Both students and faculty representatives were asked to respond. Almost half of the students (n = 959; 49.9%) reported attending seminars or workshops organised by their institutions or units, while slightly over 24% (n = 468) reported attending seminars directly related to MDGs. From a total of 1920 students interviewed, about 18% (n = 346) reported attending seminars or workshops directly addressing maternal health issues. This response is comparable to the rates of 45.7% and 18.3% of department representatives reporting having seminars organised by their units and having maternal health issues incorporated in those seminars. The majority (68.2%) of the department representatives reported gaps in training and research directly related to maternal health issues.

These gaps were identified in three main areas: 1) funding (36.1%); 2) information requirements about maternal health issues (27.8%); and, 3) sensitization needs on the subject matter (36.1%). Further, an evaluation of these gaps by characteristics of country of residence, type of department (science vs. arts) and foundation body was carried out with association established using the Pearson Chi-square test. Significant association between the existence of gaps in addressing maternal health issues and country of residence was established ($\chi^2 = 11.8$, $p = 0.003$); a higher proportion of department representatives reporting gaps were in Uganda (78.3%) compared to the estimates among Kenyans (53.8%).

Chart 3.5 identifies family planning (64.5%), reproductive health issues (61.4%), STI including HIV/AIDS (50.3%) and maternal mortality (46.7%) as the key maternal health issues addressed in the seminars organized by the universities or departments.

There was a significant association between their responses and country of residence and university foundation body ($p < 0.01$). In Kenya and in universities with government support, higher proportions of department representatives reported having strategies in place for integrating aspects of MDGs. A higher proportion of department representatives reporting receipt of funds to assist research directed to the MDGs were noted among the Kenyans and

government aided universities. However, the number of representatives reporting receipt of funds for addressing MDGs (11.3%) and maternal health issues specifically (7.2%) was generally low.

Training programs in universities

Most of the heads of department interviewed across Universities said that there was no specific focus on maternal health while training university students especially those in courses outside streamline health. The reasons given for not focusing on maternal health included not identifying the relationship between maternal health and the courses they take, lack of trained human resource in maternal and lack of financial resources. For example one of the Heads of Department in the Faculty of Business administration had this to say;

“The department deals with business administration courses and they are not related to Maternal Health”

The limited focus on maternal health training in private universities was linked to it being “unprofitable” and it being “government business”. Some of the lecturers from a private university reported the following;

“The University is profit minded they don’t get money from government therefore there is little work done on maternal health”.

“The University is privately owned and the owners don’t invest in such activities if they are not on the curriculum”.

“Private universities are commercial and don’t focus on public utilities...their focus is on class teaching, the lecturer is expected to enter the class and teach but not research”

Those that said they were doing something with their students related to maternal health, said they were counseling students, instilling ethical values, practicing affirmative action, sensitization on maternal health, supporting pregnant students, public debates and doing community outreaches.

Some universities reported doing facilitation and training of lecturers on issues related to maternal health. Others focused on gender and trained medical and nursing students. Maternal health was embodied in courses offered in the social science subjects of social work/Development studies, Counseling, Human Nutrition and Health courses. Even then, despite the mention of issues around maternal health such as HIV/AIDS and family planning, there was no detailed focus:

“At times, we mention of terms like family planning but with no necessary detail”.

“The department has nothing specific to help students improve maternal health; the only time we mention something general about maternal health is when we cover population dynamics even then it is general like making mention of the need for family planning to control a big a population.”

There was a non-appreciation of maternal issues even among lecturers. One respondent linked this to cultural impediments. This was his comment:

“Giving birth is sacred-people are not interested in it until a child is born. There is a myth around it. It is seen as a women’s specialist area [it is not a men’s area].”

There were some unique cases like a school of public health in one of the public university which has reproductive health division which is an area of sub specialization- reproductive Maternal/Child health division specifically focusing on maternal health issues.

Some universities did say they offered specific course units on maternal nutrition while one of the private universities did offer cross cutting courses taken by every student and one of the areas covered was maternal health.

In another university, the computer science department had designed e-infrastructure for the medical school and a neighboring hospital which was being utilized to collect data on maternal health and also created a window for enable all students from other courses know more about maternal health using the internet.

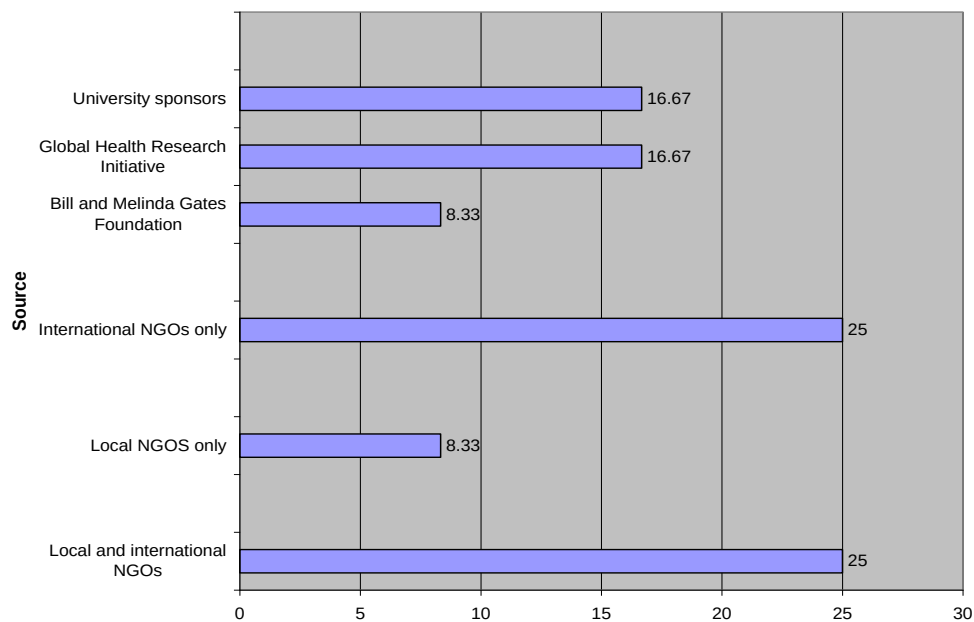
The relativism in curriculum interpretation creates room for either focus or non-focus on maternal health issues. The limited involvement in maternal health issues is partly because the lecturers who are in charge of interpreting the curriculum and course objectives are not in themselves having qualifications with a bearing in maternal health, those that have such qualifications are very few.

Table 3.6 Plans to integrate aspects of MDGs in department activities

Characteristics			
	N	Response (%)	
		Yes	No
Residence			
Uganda	87	41.4	58.6
Kenya	72	69.4	30.6
$\chi^2 = 12.4, p = 0.000$			
Foundation body			
Private	114	49.1	50.9
Government	38	78.9	21.1
$\chi^2 = 10.3, p = 0.001$			

Regarding funds for addressing MDGs including maternal health issues, the results in Chart 3.6 report the main sources to be NGOs (58.3%), global health initiatives and university sponsors at 16.7% each and, lastly, private foundations (8.3%).

Chart 3.6 Source of funds for research on MDGs



3.8 Social networks & collaborations

In the literature, universities were identified as contributing to knowledge through collaborations with other institutions and stakeholders, including the community. To evaluate this position, the survey identified possible local and international collaborations among the institutions. Thirty-eight percent ($n = 73$) of representatives reported having any collaborative programmes with an external civil society or NGO, while 17.8% ($n = 35$) confirmed having collaborations that specifically promoted or implemented maternal health. There was no significant difference between Kenyan and Ugandan universities with respect to engagement with these external organizations ($p > 0.05$). Neither the foundation body (government versus private) nor faculty type (arts versus science) seemed to determine the tendency to collaborate with civil society/NGOs (see Table 3.7).

Table 3.8 Collaborative programs with external organizations by characteristics

Characteristics	n (%) (N=197)	Existence of Collaborations (%)	
		Yes	No
Country			
Uganda	107 (54.3)	41.1	58.9
Kenya	90 (45.7)	34.4	65.6
$\chi^2 = 0.9, p = 0.336$			
Foundation Body			
Private	147 (75.6)	38.8	61.2
Government	50 (24.4)	36.0	64.0
$\chi^2 = 0.1, p = 0.727$			
Department			
Arts based	106 (53.8)	32.1	67.9
Science based	91 (46.2)	45.1	54.9
$\chi^2 = 3.5, p = 0.061$			

There is limited staff involvement in research, particularly those in the non-medical and non – nursing professionals.

In terms of students doing research, there was evidence that only students in the fields of nutrition and social science were undertaking some research on maternal health. The major causes mentioned were lack of funds, time and conceptualization of research in line with maternal health. Some departments had no research focus and there was no motivation to undertake research on maternal health.

One respondent said, *“There are no funds to conduct research that would not bring profits... there is a general lack of motivation”*

There were issues of low capacity reported as one respondent had this to say;

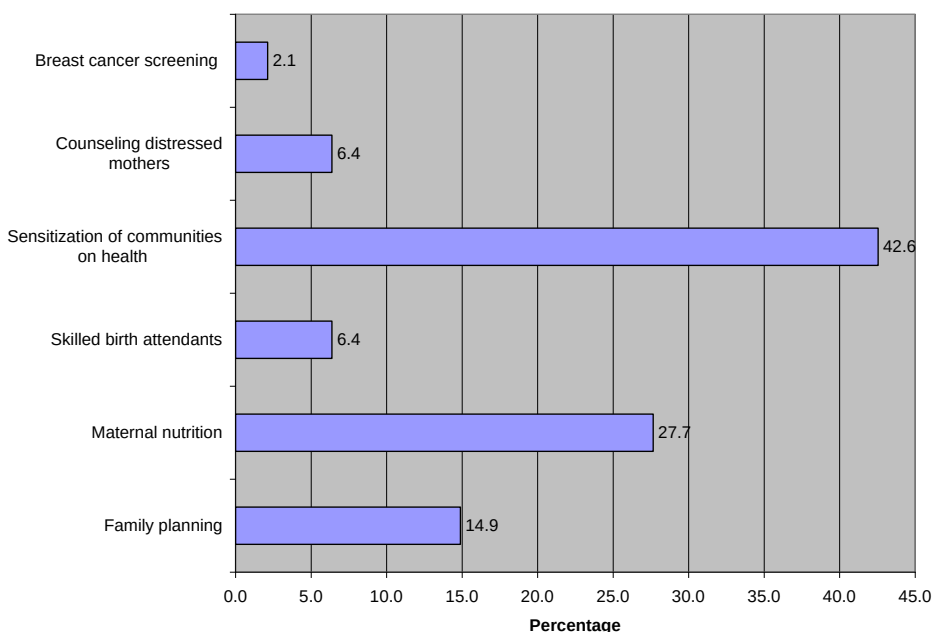
“The medical doctors are few and they don’t have time for research, the capacity in terms of capability is low, the nurses see the challenge but lack scholarly attitude.”

3.9 Maternal health issues addressed in communities

To assess the contribution of the department in communities, particularly regarding maternal health issues, the representatives were asked to respond to whether or not their units had been involved in any community work on the subject. Just over ¼ of the department representatives (29.9%; n = 59) confirmed carrying out community work related to maternal health issues.

The most commonly addressed maternal health issue was sensitization of communities regarding health related issues (42.6%). Science-based departments were more likely to participate in community work compared to arts-based departments ($p < 0.01$). There was no difference between rates of involvement by universities in Kenya and Uganda (see Table 3.7).

Chart 3.9 Maternal health issues addressed in community work



Community outreach by university programs that related to maternal health had a minimal focus on family planning. Only 14.9% of the community work dealt with this issue and only 6.4% focused on the need for skilled birth attendants.

3.9.1 Community outreaches

Universities involvement in terms of community outreaches targeting women's health, several universities said they had outreach activities related to maternal health issues.

Universities that had medical and nursing students said that they had outreach programs rich in maternal health are entrenched in their curriculum. Other universities had clinics/health centers which were open for community members and part of the services offered centered on maternal health. There was sensitization of the communities around poverty and HIV/AIDS, which have a direct on maternal health.

One of the private universities in collaboration with Doctors without Borders and the Italian government was carrying out projects in the neighboring villages on maternal health and HIV/AIDS. It has also trained midwives in these communities.

The medical science based government universities were doing more in line with maternal health; one of the lecturers from one of these had this to say about community outreaches by the university;

"There are many projects run by the university about maternal health like Katimba where we give women in our communities' mosquito nets, we immunize their babies and do mobilization and sensitization"

In a similar public University the respondent said that:

"The department even by design does a lot of community outreaches, 60% of the student's time is supposed to be spent in the field at sites supervised by the district health office. During this time they do a lot of hands on with the community and have maternal health on the agenda".

In one of the universities, the development studies department along with computer science and the medical school were networking for improved maternal health reported the following:

Medical students are attached to community units-there is a niche for outreach programs which is entrenched programs. There is improved networking and outreach via telemedicine, mobile or remote e-health systems based in villages/communities.

3.10 Institutional capacity in training for maternal Health

It generally emerged through the interviews that the universities had the technical potential needed to train for maternal health; however they felt that maternal health is medicalised. One of the respondents had this say in that regard:

“University staff has the capacity and willingness as long as maternal health is publicized to be a non-medical issue.”

“The divide between social scientists and medicine has caused limited focus on maternal health.”

In the same breath another respondent said *“the issues of maternal health have been medicalised we think it is the doctors and nurses to deal with them.”*

In other words there was a general lack of understanding of the social cultural economic, factors, that is, the non-medical determinants of maternal health. The findings that lack of knowledge on maternal health issues among lecturers interviewed 60% (n=16) especially among the social science departments is a key cause for non-appreciation of the non-medical dimensions of maternal health.

“Lack of knowledge about maternal health is still a challenge... staff will not be in position to teach when they, themselves don’t know much” as said by a university lecturer.

3.11 Gaps and Hindrances the universities to contribute and promote MDG-5

Constraints inhibiting universities from contributing towards the attainment of the millennium development goal 5 (reduction of maternal mortality) are partly attributed to gaps in curriculum and training. While maternal health is a diverse concept with cultural psycho-social and socio-economic and cultural dimensions, the training is basically focused on biomedical fields and lacks integration with other relevant fields in the humanities, physical and social sciences.

It is clear that maternal health is broad and complex and it is as much a socio-economic, socio-psycho and cultural discipline as it is biomedical. Despite this, the content of training is not derived from multiple sources and many of the lecturers and facilitators tend to specialize in a limited range of fields (particularly biomedical). The wide range of professional expertise and experience is not exploited to promote training in maternal health.

A closely related limitation is the lack of maternal health mainstreaming in the universities activities and programmes. The few non-medical discussions on maternal health revolve around family planning issues than antenatal care, maternal morbidity and nutrition. This is because there is no specific focus on maternal health in the training of non-medical courses. The main sources of such knowledge on maternal health are media such as radio, television, newspapers and other print media. Maternal health issues are only handled in faculties that deal with medical or health training. Even then, the focus is on curative rather than preventative initiatives.

Baseline findings reveal that only 4.8% of students and 4% of lecturers indicated that universities have responsibility for fulfilling MDGs. The lecturers indicated that they could not identify relationship between maternal health and the courses they teach. Findings further revealed that there is limited research conducted on maternal health. Community outreach is also lacking except when it is a mandatory aspect of training.

These curricular constraints are aggravated by pedagogical issues and challenges. Existing teaching and learning practices tend to over-emphasize cognitive and psychomotor dimensions to the detriment of affective aspects of learning. Maternal health training could benefit from innovative teaching and learning approaches based on experiential learning, problem-based learning, mentorship program, adult learning and other effective community approaches. Dependence on conventional learning experiences also deprives the programme's multimedia presentations and in particular, opportunities provided by ICT. Consequently, there is a limit in the extent to which universities could contribute the millennium goal of reducing maternal mortality.

CHAPTER FOUR: DISCUSSION

4.1 Knowledge about Millennium Development Goals

The following are recommendations, based on the research, which we believe will enable and maximize the resources of students, faculties and universities toward the realization of the Millennium Development Goals in East Africa. One of the key training issues identified is the lack of discipline integration and the tendency for lecturers to specialize in a limited range of disciplines. This limits the contribution that a wide range of disciplines could make to maternal health programmers. These issues raise the necessity to mainstream maternal health into other courses/disciplines offered at the universities.

Given that the issues of maternal health are broad and complex, the discipline is as much a socio-economic, socio-psycho and cultural phenomenon as it is biomedical. The content of the programme need to be derived from multiple sources and delivered by professionals of diverse backgrounds using multimedia presentations. The cultural psycho-social and socio-economic and cultural aspects of maternal health call for training programmes in which all the educational domains are balanced, specifying the cognitive, affective; psychomotor dimensions of maternal health. These dimensions may have to be propagated by innovative approaches such as experiential learning, problem-based learning, mentorship program, adult learning and other effective Community Approaches.

4.1.1 Millennium Development Goals (MDGs) in general

One of the key strategies of the Millennium Development Goals is to enhance awareness of basic development issues. In this study, a significant number of university students, arguably the brightest and best educated youth in the country, reported a lack of awareness of the objectives and deadlines of the MDGs. Students in Uganda and Kenya, in both public and private universities, were equally ignorant. Clearly, both countries and all universities need to be targeted for enhanced training and education with respect to information about and implementation timetables of the MDGs within East Africa, one of the neediest areas of the world with respect to alleviating poverty.

4.1.2 Millennium Development Goal 5 (MDG-5)

The levels of students' knowledge about the foundations or pillars of MDG-5 (improving maternal health) varied. For example, the vast majority of students reported knowing the advantages of mothers delivering in health facilities, over two thirds of students knew the recommendations for the treatment of mothers with HIV/AIDS who are pregnant, and sixty-five percent of students reported having attended workshops/seminars related to family planning. However, the majority did not know the minimal standard number of antenatal visits recommended for pregnant women, nor did they know the concept of optimal child spacing, considered to be one of the primary pillars.

These findings point to the gaps in essential knowledge as reported by the students. There is a need to ensure that all students have a basic knowledge and understanding of the key foundations or pillars of safe motherhood so that they can accurately and effectively participate in promoting essential messages and information to improve maternal health in their various communities.

4.2 Student Attitudes towards Maternal Health Issues

The attitudes of the students towards issues of maternal health and women's rights in general were positive. Very few were unsure about issues such as the lack of entitlement of men to beat their wives or whether or not female genital mutilation was a violation of women's rights. Interestingly, however, students reflected a lack of knowledge regarding issues of maternal mortality. More than ten percent were not sure whether maternal deaths could be prevented and nearly fifteen percent were unsure if traditional birth attendants could save mothers' lives. In addition, almost twenty percent were unsure whether or not men should accompany their partners to the health facility during delivery is an essential component in ensuring women receive timely and supportive care. Although it is heartening to uncover the essentially positive attitudes toward maternal health issues reflected by most students, there is still important information to be transmitted and absorbed by all students.

4.3 Universities and Millennium Development Goals

4.3.1 Universities' responsibility for fulfilling MDGs and MDG-5

Neither students nor faculty were clear about the role of universities vis a vis the MDGs and specifically MDG-5. The majority believed that combined government and United Nations efforts should be adequate to deal with the issues of improving maternal health. It seems that the attitude of 'someone else will fix the problem' was the predominant perspective.

Only 4.8% of students and 9.5% of faculty believed that it was a university's responsibility to participate in this challenge. It would appear that the university leadership, which directs university spending, has a similar perspective as only 16.7% of the funding for all MDG research within the university comes from the university itself. And, since only 7.2% of all university departments received funding for maternal health research, very little money is being allocated by the universities to carry out this research. The lack of priority for this research and its subsequent dissemination may give signals to both faculty and students that universities do not believe that MDG's and particularly MDG-5 are worthwhile areas of concern and attention.

4.3.2 Universities as information sources about maternal health

From the students' perspective, the contribution of the universities towards their knowledge of maternal health was focused on the issues of HIV/AIDS and STI, promotion of women's rights, reproductive health issues, girl-child education and antenatal and postnatal care. Other maternal health issues such as family planning, female genital mutilation, maternal mortality and maternal nutrition appear to have been less well covered. Often these issues are perceived to be more controversial and less well understood as issues. Student knowledge of maternal health issues tended to reflect those issues which were emphasized in the university context.

It seems that the seminars and workshops organized by the universities are indeed targeting some essential issues in maternal health including family planning, reproductive health, HIV/AIDS and STI, and maternal mortality. However, only 17.2% of the students reported attending any of these seminars/workshops. The majority of students are not utilizing this medium of learning. This highlights the need to both utilize strategies that will increase attendance at seminars/ workshops and also to ensure that the key maternal health messages

are being distributed through more streamlined channels of the university. This would include the general curricula and other educational opportunities in which more students participate.

Since the media play an important role in contributing to students' knowledge about MDGs, it would also be important to promote university media as conduits for the distribution of maternal health messages. This would include any university radio or newspaper that reaches university audiences.

4.3.3 Universities' focus on maternal health issues

With respect to the three main roles of a university, teaching, research and community engagement, East African universities are not playing an optimal role in promoting MDG-5. Students have not developed a clear understanding of MDG-5, despite its relevance to the context in which the students live. Curriculum content in most universities, as reported by the students and faculty, is scarce, particularly in some contentious yet vital areas of maternal health, for example family planning, female genital mutilation, maternal mortality and maternal nutrition. Community engagement is lacking and must be promoted both through policy change and financial support at the highest levels.

4.3.4 Training in maternal health care

Maternal health skills were not emphasized in university training and particular areas of maternal health were very poorly represented in the universities' training programs. Students reported minimal training in the areas of antenatal care, maternal morbidity and maternal nutrition—all essential components of a holistic approach to maternal health. Not surprisingly, students in health professions were more likely to report that they felt more adequately trained in maternal health care skills. In addition, women were more likely to report the same – this may be a reflection of the higher enrolment of women in health care programs. There is a need for university programs to incorporate the entire range of maternal health care issues and services in their training and education of future multi-disciplinary professionals as well as health care workers.

4.4 Curricular Revision Possibilities

The need for curriculum review and the intentional incorporation of MDGs and, more specifically, MDG-5 into university curricula was reinforced by the findings of this study. However, in order for that to be achieved, the requirement for strategic planning and action cannot be underemphasized. Just slightly over half of the faculties had a strategic plan to incorporate MDGs into their curricula. Most notably, Kenya and public universities in both countries were more likely to have this strategy in mind. Interestingly, but not surprisingly, those universities (Kenyan and public) receive more funding for research about MDGs, although funding for all universities for MDGs in general and MDG-5 in particular is consistently inadequate.

The key players in influencing curriculum revisions were the management within the universities and departments themselves. Therefore, it is essential that managers within universities are aware of the need that content pertaining to MDGs be included in curriculum review and that they are able to acquire this content. National bodies such as the National Council for Higher Education are important sources of information/technical advice for curriculum review according to faculty who participated in this study. These organizations should also have access to resources and have policies in place to encourage and foster the education of university students about these important topics.

4.5 MDG Research Creation and Dissemination

The absence of information relating to MDGs in the curriculum may be related to insufficient research activities in both Kenyan and Ugandan universities. There appears to be a dearth of funding for MDG related research and activities, most specifically in the area of maternal health. Academic publication rates that relate to maternal health research are very low in both Kenya and Uganda but more profoundly so in Uganda. This is most likely related to the generally lower funding support for maternal health in Uganda. As research and publications increase, the opportunity for and interest in research dissemination through workshops and seminars will, undoubtedly, increase.

4.6 Social Networks and Collaborations

As interest and knowledge increase in this field, one could anticipate greater involvement by universities with communities. Communities can be used as vehicles to improve maternal health and give students an opportunity for practical experience in important development and health issues. Currently, the engagement and outreach to communities by most universities is minimal—but these important resources are ones that university departments can be encouraged to develop and nourish for the mutual benefit of both.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Addressing the training and curricular issues call for collaborative ventures which involve inter-university cooperation and working with professional bodies, NGOs and research initiatives. These collaborative ventures could enable the sharing of insights, expertise, best practices, resource materials and research findings in curriculum design, pedagogy and multimedia learning. The collaboration is likely to enhance the capacity of the Universities' to contribution towards the attainment of Millennium Development Goal-5: Maternal Health.

A number of respondents in the qualitative study pointed to the need for the National Council of Higher Education playing a leading role in three respects; 1) coordinating the universities efforts towards collaboration on issues of maternal health; 2) making it mandatory that maternal health is mainstreamed within the existing university activities and 3) monitoring the implementation of the initiatives for institutionalizing maternal health in universities and other high institutions of learning.

5.2 Recommendations and Implications for Policy

5.2.1 Level of Knowledge about Millennium Development Goals (MDGs)

- East African Universities need to offer more education and opportunity for their students to learn and become engaged in the realization of the Millennium Development Goals and in particular, MDG-5 (the improvement of maternal health).
- There is a need to sensitize and educate university students about maternal health issues within the context of other MDGs.
- Both medical and non-medical students need to be educated about MDGs.

5.2.2 Responsibility for Fulfilling MDGs

- National governing bodies need to ensure that individual university institutions are mapping a clear path to ensure that all students receive education and training about the Millennium Development Goals and, in particular, MDG-5 (the improvement of

maternal health). This is an important educational objective that cannot be left to chance.

5.2.3 Universities and MDG 5-Focus, Knowledge, Attitudes and Skills

- There is a need to educate both faculty and students about the role which can be played by universities in promoting MDG-5 through knowledge generation and transmission, the creation of appropriate attitudes about maternal health, and the development of skills in relation to maternal health issues. Both curricular content and extracurricular input can be used to obtain these results.

5.2.4 Curricular Revision Possibilities

- The regular review of curricula by universities and/or individual departments must ensure the integration of the MDGs into university programs.
- This objective must be realized in all curricula and not simply health-based programs.
- Knowledge about MDG-5 is important for students as individuals and citizens and is not restricted to their employment role.
- The curriculum needs to address attitudes which impact the realization of MDG-5.
- Attention needs to be given to the development of skills for students in professional courses to ensure exposure to 'hands-on' real life surroundings to bridge the gap between theory and practice.

5.2.5 Research Dissemination through Workshops/Seminars

- Attention needs to be given to the dissemination of research relating to MDG-5 (improving maternal health) through seminars and workshops for both faculty and students.
- Participation in these workshops could be used to forge linkages with community service groups.

5.2.6 Social Networks and Collaborations

- Universities need to explore ways of collaborating with their communities to enhance both student learning opportunities and communities' access to research.
- In particular, universities should provide educational opportunities for their communities in relation to the MDGs and in particular MDG-5 (maternal health).

5.2.7 Research and Dissemination

- More financial support is required to ensure that universities are engaged in meaningful research related to the MDGs and in particular, MDG-5 and its application in Sub-Saharan Africa. Universities must prioritize relevant research that can contribute to the realization of MDG-5 (the improvement of maternal health).

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