REVIEW ARTICLE

Health and wholeness undergraduate course in Uganda: Potential public health impact and transferability

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Abstract

Over 26,000 students at a major Christian University in Uganda have completed a single semester course on Health and Wholeness. While common in other higher education contexts, general education courses and health education courses in particular are uncommon in the Africa higher education context. This course therefore is a bold initiative by Uganda Christian University. The course is designed to help students in a wide range of programs understand how to promote and improve health in their own lives as well as their homes, communities, workplace, and society. Students learn about the definitions of health and wholeness. They discuss hygiene; nutrition; sanitation, water, and land use; common occurring health problems, HIV/AIDS and sexually transmitted infections; sexuality; first aid and early intervention; family health, dependence, fitness and life skills, and leadership for a healthy society. Through discussion, students are expected to identify factors that hinder or enhance health. Challenges and lessons learned in the course include confronting cultural practices, improving critical analysis skills, addressing information at the right technical level, and improving behavior change. Because graduates come from, and move on to, virtually all facets of economic, civil, and social life in Uganda and beyond, this course could carry tremendous potential to improve the public's health.

Introduction

Over 26,000 students have completed a semester-long course on Health and Wholeness at Uganda Christian University (UCU) from 2005 to 2016. General health education courses like this are not common in Low and Middle Income Countries (LMICs). Yet, such courses prove highly valuable for improving health due to the scale of students they reach and the anticipated trajectory of graduates. A well-designed course should have significant transformational impact not only for the student but for the families and communities in

which graduates live and work. A course like this has the potential to influence a generation of leaders as "health advocates" in business, government, ministry, and civil society.

This paper outlines the development of the course generally and the definition of "wholeness" in particular. The paper also outlines lessons learned based on several challenges that were encountered.

Background

Health in Uganda

The experience of many people living in Uganda and throughout East Africa highlight the need to continue raising awareness of health and improving health behaviors. Uganda, like many low to middle income countries, lags in key health indicators. For example, analysis of World Health Organization global health statistics indicate that life expectancy is 12 years shorter in Uganda than the average for the rest of the world, at 59 compared to 71 years. The Under-five mortality rate is 66.1 per 1000 live births in Uganda is far higher than the 45.6 per 1000 live births seen globally.[1] Save the Children's "Mother's Index 2015" ranks Uganda at 141 out of 179 countries for maternal health; children's well-being; and education, economic, and political status.[2] However, recent findings by the Uganda Bureau of Statistics highlight significant improvement in the health status of Ugandans as evidenced by:

- Life expectancy at birth increased from 50.4 years in 2002 to 63.3 years in 2014.
- Infant mortality improved from 87 per 1000 live births in 2002 to 53 per 1000 live births in 2014.
- Under five mortality rate improved from 156 per 1000 live births in 2002 to 80 per 1000 live births in 2014.
- Total fertility rates also improved from 7.1 children per woman in 1991 to 5.8 children per woman in 2014.

Environmental health conditions are also improving. For example, the proportion of households using improved water sources grew from 24.8% in 1991 to 60.9% in 2002 to 71.2% in 2014. The proportion of households without toilet facilities also dropped from over 25% in 1991 to 8% in 2014.[3]

Reasons for this are varied. Certainly, comprehensive efforts coordinated at the Ministry of Health involving numerous domestic and international partners are among the ingredients of success. The quality of health stories in the media; the integration of health promotion in the church; the consistent messages across levels of government; and initiatives by business to improve care for their employees and families all suggest what can happen when well informed leaders speak out on health.

Integrating general health education courses in higher education in LMICs could play a further role in improving the public's health. In such contexts, higher education is a highly coveted opportunity. It is a source of leadership formation. Graduates have the opportunity to improve their own lives as well as influence business, church, civil society, and other organizations. How well prepared are University graduates to take up this role?

Introductory Health Courses in Higher Education

General or introductory health courses are associated with better health knowledge and behavior according to research compiled over the past several decades. For example, Pearman et.al. found that alumni from a college that required a health course were significantly more likely to know their own health, blood pressure and cholesterol, engage in aerobic exercise, not smoke, and take in less dietary fat than alumni from a college that did not require a health course.[4] DeVoe et al. found that 66% of all health course

participants made changes in at least one significant health-related behavior.[5]

Health education can also improve student wellness. Higgins et al. found that an introductory wellness course improved students' sense of wellness. Dimensions of wellness they identified are physical, spiritual and psychological "being," physical, social and community "belonging," and practical, growth and leisure "becoming." [6]

Creative alternatives to traditional lecture formats may increase health course effectiveness. For example, health courses could be more effective when they support students' self-assessment, contract with students for change in health behavior, and encourage students to engage in campus-wide health programs.[7] Courses that mix online learning and traditional lectures yielded higher student satisfaction and achievement.[8]

As a result of the mounting evidence, general health education courses are considered an important part of general education in United States higher education. In 2003, the Institute of Medicine of the National Academies of Science recommended that "all undergraduates should have access to education in public health" in part to assure an educated citizenry.[9] A consensus conference on undergraduate public health education affirmed this objective and further recommended that public health courses be integrated in general education requirements, especially by focusing on particular topics such as HIV/AIDS.[10]

Personal experiences of the authors demonstrate, however, that general education requirements are uncommon in the African higher education context. No other universities in sub-Saharan Africa were known to offer a required health course at the time this course was developed. This is because, in Uganda, traditional higher education was historically utilized to train people for specific careers such as finance or teaching. Integrative general education courses that reach outside the specific technical discipline seem to not to be popular in this education context. This observation, if true, could be changing. The Seventh Day Adventist universities may now offer general health courses, for example.

There is unfortunately not much guidance or research on health seeking behaviors or effective ways to reach general university students in Africa with messages of health. Most UCU students self-report that they are in good health — 14% report their health as excellent, 32% report very good, 40% report good, 13% report fair, and 1% report their health to be poor.[11] Men were more likely than women to report their health to be excellent or very good. Moreover, 26% of students reported an unmet health need in the current or prior semester. The most commonly cited reason for this was hoping that the problem would go away on its own; this was followed by institutional challenges with receiving health care.

These results are comparable to another recent study of health-seeking behavior among students at a different university in Uganda. There, two out of five students reported unmet medical care needs, and one out of five reported unmet sexual health counselling needs. Acceptability of services was the main barrier faced by students. Students from rural or peri-urban areas were less likely to seek health care than their counterparts from urban areas.[12]

It is within this context that UCU leaders determined to launch a bold experiment, to establish a semester long course on health.

Uganda Christian University

UCU is an accredited private nonprofit university system with over 12,000 students. It was established by the Church of Uganda in 1997, promoting the historic Bishop Tucker Theological College into a full university. At the time the course was developed, the university included only 2500 students at the main campus. It was the first private University to be chartered by the Government of Uganda and is Africa's first affiliate of the Council for Christian Colleges and Universities.

The vision for UCU is a "Center of Excellence in the Heart of Africa." Their ambition is nothing less than to use university education as a means to change the hearts and minds of a broad swath in society.

The UCU system now includes the main campus near Kampala, constituent colleges in the East at Mbale and Southwestern Uganda at Kabale, a rural campus in the North and an urban campus in Kampala. The university is composed of faculties of Education and Arts, Business, Social Science, Law, Science and Technology, Health Science, and the Bishop Tucker School of Divinity and Theology.

Students at UCU reflect diverse economic and social backgrounds. Currently, 52% of students are female; 95% come from Uganda, while the other 5% come from up to 14 other African countries. Students represent every tribal/ethnic line in Uganda as well. A recent study of UCU students found that 80% of the students came from households headed by someone with post-secondary education, and 3% of heads of households had no formal education at all.[6] Many UCU graduates have moved into significant leadership positions in government, business church, and civil society. Some work in the capital, others work in cities and towns or villages throughout the country and beyond.

Development of the Course

In 2003, the UCU University Council created a requirement that all students should be trained in principles of healthy living. Ultimately this requirement fit within a general education framework adopted by the University Senate, which included 8 required courses:

- Old Testament
- New Testament
- Understanding your World View
- Christian Ethics
- Mathematics
- Writing and Study Skills
- Basic Computing
- Health and Wholeness

The Health and Wholeness course was assigned to the Department of Health Sciences at UCU that was established in 2004, within the Faculty of Science and Technology. Department leaders assembled 12 experts in public health and/or medicine to provide input into the course; eight were from Uganda and four from the United States and Canada. Course content was drawn from a variety of community and public health resources and books, along with original writing from the experts. UCU published *Health and Wholeness: Student Workbook* in 2005, with significant updates in 2007, 2010, and 2013.[13]

The health and wholeness course was created mostly with East African students in mind. Topics reflect a mixture of general health and specific issues facing Uganda and the rest of East Africa. The language used emphasizes the issues that local health experts desired to have promoted, informed by understanding of relevant cultural and religious norms. For example, discussions about sexual behaviors reflect the values of both Uganda's government and church leadership. More casually, discussions about nutrition reflect the preponderance of carbohydrates and the lack of micronutrients in local diets.

Students began taking the 12-week course at the main campus in September 2005, and the course has continued to be taught to this day throughout the UCU system. Each year, approximately 3,000 students complete the course — totaling over 26,000 to date. The course was recognized in 2006 with an award for innovations in Uganda Higher Education.

Course Objectives

The objective for the course is to educate students to make healthy life choices and become effective "health advocates" within whatever situation they live and work. Almost immediately after the course was launched, students reported sharing their course content with their families.

Ministers spoke of using the course content in their sermons. A new vision and renewed objectives formed around creating effective "health advocates" in any context in which they live and work.

As a result of this course, students are expected to:

- Be encouraged toward better "health seeking" behavior.
- Acquire knowledge, skills and abilities that promote a longer, healthier, and more complete and holy life.
- Recognize that health and wholeness is a product of individual, family, and community factors, including knowledge, beliefs, attitudes, and behaviors.
- Understand how the Christian concept of the *whole person* is integral to complete health.
- Recognize their role as *health leaders* even if they are not professional health workers.

Specifically during the course, students are expected to:

- Define and apply concepts in health and wholeness, including relationships of physical, mental/emotional, social, and spiritual health factors.
- Identify and describe subjectively how personal behaviors and choices affect short and long-term health of self and family.
- Develop personal goals and make recommendations to family, friends, or a local community for improving health.
- Identify and apply concepts in prevention: hygiene, nutrition, healthy sexuality, maternal/child health, and fitness.
- Identify and apply concepts in intervention: first aid and early intervention, infectious disease, sexually transmitted infections, and alcohol or drug dependence.
- Identify and apply concepts in community/environmental health such as sanitation, water and land use, as well as social topics that influence the health of society.

Course Synopsis

The course content is then divided into 12 sections. Each week there is a lecture followed by course reading and a discussion in tutorial (table 1).

Table 1. UCU Health and Wholeness Course Overview

Subject	Key Message
Introduction	Health is more than the absence of disease: it is a state of physical, social, emotional/mental, and spiritual wellbeing.
Components of Health	Understanding physical, social, emotional, and spiritual components helps make wholeness more clear.
Nutrition	We need macronutrients and micronutrients each day to remain healthy, but we often eat the wrong balance of food.
Hygiene	We transmit germs and disease by when our bodies and hands are not clean, and also by improper handling and food storage.
Sanitation, Water, Land Use	Families and communities must protect sanitation and water sources and not destroy the land they need to live on.
Common Occurring Problems	Bacterial, viral, and parasitic infections cause diseases like diarrhea, pneumonia, tuberculosis, and malaria: knowing their signs and treatments can save lives.
HIV/AIDS and Sexually Transmitted Infections	HIV is not the only disease transmitted through sexual contact; early identification of the symptoms can save men and women from serious complications.
Sexuality	Sex is God's gift to a married couple. Breaking that gift has consequences in life and relationships.
First Aid/Early Intervention	Correctly identifying a problem and providing assistance or seeking help can keep a bad situation from becoming worse.
Family Health	Mothers and children die around child birth or when children are young; family planning, safe delivery, and other preventive measures save lives.

Dependence	Sometimes we lose control over some activity we enjoy or some substance we take in, and it controls us. Breaking such habits is very hard.
Fitness and Life Skills	We need endurance, strength, and flexibility in all aspects of lives: physical, social, emotional, and spiritual; we should know and apply healthy life skills.
Leadership for a Healthy Society	Social health is influenced by our attitudes and beliefs; some social problems compromise everybody's health.

Tutorials

During the course, students meet in a 2-hour lecture and then again in 2-hour tutorials led by a tutorial assistant. The course is always taught by a person knowledgeable in health. The tutorials, however, are designed to foster discussion among students about those practices that promote or challenge adoption of healthy behaviors. It is when students interact with the information and seek how to apply it in their lives that change should take place. Therefore, students were divided into small groups for the tutorials to discuss healthy practices, with the intent to share these concepts and information with other students.

Defining health and wholeness – making it "real"

Most students start the course with a belief that *health* is simply *not being sick.* Medical care helps restore health through medicine; the message of the church is that health is restored through healing and compassionate care.

This perspective on health is lacking in two ways. First, students may not appreciate how their own choices and decisions affect not only their personal health, but that of others in their family, community, and society. Second, this view is often limited to physical health rather than holistic wellbeing.

As a result, students in Health and Wholeness first learn the World Health Organization's definition of health: "Health is the state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."[14]

This broadens understanding of dimension in health. It causes the student to ask: even if I am not *sick*, am I *healthy*? The result is a radical departure in understanding for many students.

In a Christian world view, this definition of health lacks a specifically spiritual focus and the transformational element of our faith. In this view, health surpasses individual and even social determinants. Health is also more dynamic and active than implied with "complete wellbeing" — like our faith; it is a journey or process of learning and acting followed by more learning and acting.

Course developers turned to scripture to identify the foundation for a vision of wholeness and found Jesus' affirmation of the two greatest commandments:

> "You shall love the Lord your God with all your heart and with all your soul and with all your strength and with all your mind, and your neighbor as yourself." **(**Luke 10:27, English Standard Version)

The course developers thought that heart, soul, strength, and mind create a framework for wholeness. Wholeness incudes social, spiritual physical and emotional health. Heart is often thought of as love or compassion, which is social health. Soul is clearly spiritual. Strength is physical. Mind is our mental and emotional health. In this way, Jesus says we must be whole by loving God with all we have and all we are. The fact that we are to love others *as ourselves* directly relates to both self-esteem and our capacity to love others.

With this foundation in mind, course developers created a definition of wholeness that complements the previous definition of health:

> "Wholeness is a state of personal physical, social, mental, and spiritual health, in which a person knows their value in the eyes of God, their families and their communities, and where

they are empowered to make good health decisions."

This definition still affirms that health is a personal *state*. It is influenced by others but fundamentally "belongs" to the individual. This definition overtly integrates four facets of health: physical, social, mental, and spiritual.

This definition further identifies health and wholeness as *dynamic*. It reflects self-worth and self-efficacy as central to making change in oneself or in one's community. For example, the quality and depth of our self-esteem as well as our capacity to make good health choices will vary. Ultimately then, this course encourages students to apply both knowledge of health and understanding of wholeness in order to improve their own health behaviors.

Application of Wholeness

The challenge that the course developers faced was to apply an esoteric definition of wholeness to an immensely practical circumstance. There were three particular and unique applications of wholeness developed for the course.

Inter-connections

Physical, social, mental, and spiritual components of health all affect each other. Students should identify how strength or weakness in one area affects others. For example, positive self-esteem affects whether people seek help or take care of their bodies. Poor social habits such as arrogance and pride, or conversely, isolation, can increase the chances of high risk behavior. Physical activity helps counter depression. Spiritual health helps students understand love — and lift their self-esteem. In fact, dwelling on Psalm 139:14, "*I am fearfully and wonderfully made*," was a great launching point for a discussion of health.

Hygiene

Students learn that physical germs are not the only problems that are too small to see that can grow into huge problems. Students identify and discuss *social*, *mental*, and *spiritual* germs as well. Negative thoughts, poor self-esteem, and doubt are good examples of problems that start small but grow large if not checked.

Fitness

The object of physical fitness is defined as strength, endurance, and flexibility. Students discuss how those same principles apply to social, mental, and spiritual situations. For example, social flexibility implies being able to adapt to the situation. Mental endurance is needed especially for students in demanding courses. Spiritual strength is necessary during life's dark periods — and develops over time along with "exercise" in the form of good study, healthy prayer, and accountability.

Lessons Learned

This course was new to the Ugandan higher education context, and there were several challenges encountered.

Culture seems impenetrable, for good reason.

As noted, this course was formed by public health and medical experts from Uganda and North America and relied heavily on published works in health. Many students in Uganda possess strong cultural identity. This is a source of considerable positive social esteem. Social structures are especially strong in many African contexts.

The culture of circumcising young men in Mbale, Eastern Uganda is a good example. Among the Bamasaba or Gisu tribe, for a young man to be declared an adult man, he must be circumcised. Traditionally, his fore skin would be removed by elderly men who specialize in this practice. The cutters, as the circumcisers are known, do not receive modern training in surgical techniques, and the circumcision culture is prone to complications such as excessive bleeding and post cutting infections. There is also a possibility of disease

transmission, but this is now minimized since separate knives per candidate are now used. Men who are circumcised medically in hospitals under pain control may be considered cowards. To convince Bagisu men to go for modern medical circumcision, which is safer, is an uphill task as they believe that men have to be circumcised traditionally.[15]

As noted earlier, teaching assistants and students break into groups to discuss the topics for the week during their tutorial sessions. They focus on how to apply health messages in their lives, discussing the factors and forces that would promote or that would challenge adoption of healthy lifestyles, including facets of culture. The benefit of this is that tutorial assistants and fellow classmates are more likely to elicit authentic conversations about what students view as real issues. Further development of the course should consider ways that students could commit to improve in self-identified areas. This would be ideal for subsequent evaluation of course impacts.

The church is a logical focal point for action, and training its members can be a means. The integration of personal and public health is widely regarded as vital for community health improvement. How do individuals prioritize their own health and that of those around them? The church, despite not being filled with health professionals, are a logical organizing point to have lasting change at the community level.[16] This is an expanding frontier in health mission. Perhaps the greatest impact for these future health advocates is not the specific content of any particular health innovation, but the realization that they can make better individual and collective choices to create better health.

Developing critical analysis skills and applying information to people's lives is essential. Myth may be deeply held as truth in any context, including Uganda. Will drinking or eating cold food cause blood to congeal, leading to a heart attack? Will use of certain types of toilets render a woman infertile? Those are comparatively easy myths to discuss with students, provided that they apply critical reasoning skills. This is the challenge though, as many students enter the University from schools that rewarded memorization. Critical reasoning and analytic skill is certainly needed for more complex challenges, such as whether and how condoms reduce the spread of HIV in the general population, or how harmful impacts of poor solid waste management can be mitigated. One exercise that Health and Wholeness includes is monitoring current media for stories about health and analyzing them for their truth and their implications for the student's life.

Converting *head knowledge* into *practical action* is important. It may be unrealistic to believe that just because an authority recommends that students change their behavior that they will simply do it. University students like any adult learner take in the information and compare it with other things they know and weigh the benefits of the change against the complexity or cost of change in their life. To address this, the Health and Wholeness course incorporates practical application during tutorial discussions. Each week, the tutorials discuss factors that promote or hinder people taking up the recommendations in the class. In addition, the course relies on an assessment tool created for the course. This tool is driven by course content as a way to help trigger student interest in the subjects and ease them in to the content.

Striking the right balance of technical content is crucial for non-medical audiences. Most public health reference material widely available in Africa focuses on village health or the urban poor; or it is directed to health professionals who possess a strong scientific background. This course had to adopt non-medical language and yet impart enough factual scientific language to truly enhance people's understanding. For example, it is less important to

understand the exact types of bacteria that can make people sick and more important to understand the conditions by which bacteria grow or spread.

Course content should appeal to diverse student profiles and include professionally-oriented audiences. The course content had to be clearly compelling for students who could end up in a wide variety of living situations. For example, the course had to appeal to future leaders and address them as such. The course also acknowledged the pitfalls of professional, middle-class lives, including the income that affords richer diets that are high in carbohydrates and fat and the pressures on time that restrict physical exercise. The course, therefore, included content on body mass index, hypertension, diabetes, and the need to establish a regular fitness regimen.

Integrating the course with other health awareness activities could bolster course impact. For example, UCU offers a health awareness week each semester that could reinforce key messages in health and wholeness. Additionally, UCU offered a special week-long short course on health for working professionals. The content was based on professional public health topics rather than the more popular health and wholeness course design and messages. This could be re-evaluated.

The course has to be kept up to date. First, content needs to reflect current information about health problems and ways to mitigate them. Second, the course format, learning methodologies, and behavior change methodologies need to be reviewed periodically. These both require input from specialists in health promotion, adult learning, and behavior change. Investment by the university in keeping the course current and well-grounded is necessary. At this time, the course is fully managed in a department under the faculty responsible for theology. Neither the course instructors nor tutorial assistants are affiliated with the Faculty of Health Sciences. There may be too few interactions with the Faculty of Health Sciences to assure that the course is reaching optimal health impacts.

Discussion

Almost immediately, this course struck a nerve with students. One group of students became impassioned to share messages with people in their home villages and created the *Mission for Community Awareness and Health* that sought to increase standards of health in villages. Similarly, theology students incorporated messages in their sermons; one even said that he incorporated the subjects in his sermons each week.

Some course information is lifesaving but heart breaking when we see it come too late. During one class in which we taught the Heimlich maneuver to help someone who is choking on food, a student began to sob. She disclosed that her four-year-old brother had died during the recent Christmas celebrations because he tried to swallow too much meat at once.

Cultures change and not always for the better. The spread of media and internet accessibility brings people into contact with dramatically different global cultures and can challenge long held assumptions or beliefs. In this case, the course is intended to support those changes that promote health and wholeness, while not undermining the positive elements of cultural identity.

Three questions should be addressed in future development of courses like this.

1. What other conditions will make it possible for a course like this to truly help improve the health of a society?

A bold and holistic approach to changing health of a society requires not only awareness but a commitment by everybody to bring about change. An educated and motivated citizenry results in educated and motivated leaders. In such a case, any person properly equipped can encourage their

families, offices, communities, and churches to a higher standard for health and wholeness. So far, this Health and Wholeness course has trained 26,000 people with knowledge to be a health leader in any situation.

A university degree in low- and middle-income countries, like Uganda, has great potential to transform leaders with modern skills and knowledge. In this case, matching critical analysis skills, timely and relevant information about health, and a compelling, shared vision for health and wholeness is a potent trifecta.

Further research on the effectiveness of this course is needed. If it is as effective as believed, it could be more broadly introduced as a general education requirement. Further research into which elements of the course bring about the most change would help refine the course and increase impact.

2. How can learning from this course, developed in a Christian university context, apply to other university settings?

Obviously, it is easier to discuss the unique role of spiritual factors in health in any faith-based context. A Christian higher education context adds the benefit of core values and beliefs that positively shape both the learning environment and the message of wholeness. Perhaps a Christian education context presumes that behavior changes not only because of good technical information but because of agreement on core values and principles of compassion and value of the dignity of life. In this case, the application of wholeness to personal and communal behavior was easier in a Christian learning environment. While the idea of wholeness was developed with a Christian world view, it adds to positive core beliefs in ways that should be helpful and transformational beyond a strictly Christian context.

3. How can this model be replicated in other universities or countries?

The use of a compulsory course on health in a higher education context is nothing new in many countries, though predominantly this is not the case in Africa. The application of this course, to bring about improved understanding and behavior change in the African context, seems appealing. Obviously, much of the course content is intended to address Ugandan or East African health priorities. Definitions of health and wholeness and other basic course principles were designed with Ugandan audiences in mind but should be fully transferable to many other settings. More research will help shed light on those elements of the course that work well and that are replicable. More research, specifically at UCU, would certainly help, given the scale of the course and the diversity of the student populations present. What is needed is for one or two other universities to explore offering the same course concept and generate further ideas and strategies to improve the course.

In sum, the Health and Wholeness course that was developed at UCU has thus far reached 26,000 students. It will likely reach another 25 to 30 thousand students in the decade to come, but this could be at least doubled if additional Universities adopt and adapt this learning framework. Students seem highly receptive and motivated. Continued improvement in the course and experimentation of alternative learning approaches would add tremendous value to future effort.

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