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Satisfaction, motivation, and intent to stay among Ugandan physicians: a survey from 18 national hospitals

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SUMMARY

Objective Uganda faces a colossal shortages of human resources for health. Previous literature has largely focused on those who leave. This paper reports on a study of physicians working in 18 public and private facilities in Uganda as part of a larger study of more than 641 hospital-based health workers in Uganda. We report what could entice physicians to stay longer, satisfaction with current positions, and future career intentions.
Methods This study took place in 18 Ugandan hospitals. We describe the 49 physicians who participated in 11 focus groups and the 63 physicians who completed questionnaires, out of a larger sample of 641 health workers overall.
Findings Only 37% of physicians said they were satisfied with their jobs, and 46% reported they were at risk of leaving the health sector or the country. After compensation, the largest contributors to dissatisfaction among physicians were quality of management, availability of equipment and supplies (including drugs), quality of facility infrastructure, staffing and workload, political influence, community location, and professional development.
Conclusion Physicians in our study were highly dissatisfied, with almost half the sample reporting a risk to leave the sector or the country. The established link in literature between physician dissatisfaction and departure from the health system suggests national and regional policy makers should consider interventions that address the contributors to dissatisfaction identified in our study. Copyright © 2010 John Wiley & Sons, Ltd.

KEY WORDS: Africa; physicians; international migration; human resources; workforce

BACKGROUND AND INTRODUCTION

Uganda, like other African countries, is facing shortages of human resources in colossal proportions. The dual problems of low production and flight of qualified

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health workers are mutually aggravating. Those who stay suffer from chronic fatigue related to workload, low motivation related to working conditions, and frustrations related to poor compensation.

The migration of medical doctors (here called physicians), nurses, and other medically skilled workers from poor countries to rich ones, referred to in shorthand as the ''brain drain,'' has been widely cited as a major contributor to the health crises in Africa (Stalker, 2001; Mullan, 2002; Chen *et al*., 2004; Friedman, 2004; Hagopian *et al*., 2004; Mullan, 2005; Landon *et al*., 2006; Omaswa, 2008; WHO, 2008). Mullan has calculated ''migration factors'' for source countries—the ratio number of a country's migrated physicians now working in the four largest English speaking countries (USA, Canada, UK, and Australia) to the sum of the physicians who have both left and been left behind (Mullan, 2005). Although it underestimates the problem since it takes into account only those working in the four ''recipient'' countries, it is still a useful estimate. By this measure, sub-Saharan Africa in general and Uganda in particular are severely affected by physician migration, with 14% of Ugandan physicians abroad.

Most sub-Saharan African countries have unacceptable health status indicators (Buchbinder *et al*., 2001; Bruce *et al*., 2005). Erosion of the scarce health workforce limits access to health care that could reduce the burden of major diseases in Africa, and the loss of a middle class base further threatens development generally (Hagopian *et al*., 2005). Besides the loss of direct care, the migration of physicians also represents a loss of the resources poor countries invested in educating those health workers (Hagopian *et al*., 2004; Hagopian, 2007).

Many pull and push factors are responsible for the global flow of health workers. Pull factors acting from the wealthier recipient countries (including much higher salaries and greater opportunities for advanced professional training) are powerful. Push factors include low salaries, limited career prospects, poor working conditions, and political instability. The heralded benefits accruing from financial remittances (sent by migrant health workers back to their countries of origin) provide only a fig leaf for the damage incurred by the source countries. African remittance flows are some of the smallest in the world, in any case (Stalker, 2001).

Physician satisfaction is reported to be highly correlated with intent to stay in the profession (Landon *et al*., 2006). Factors associated with physician satisfaction in high-income countries include autonomy, good relations with patients, good relations with colleagues, control of time off, adequate material resources, access to medical information, professional goal attainment, satisfaction with the community, sufficient earnings, and job security (Lee, 1966; Franco *et al*., 2002; Kotzee and Couper, 2006; Akl *et al*., 2007).

Little research has been conducted on the factors associated with physician satisfaction in low-income countries. Attention has traditionally been concentrated on those who leave and the effect their departure has on source (donor) countries. Why do some licensed health workers continue to practice their professions in low-income countries, in the face of challenging working conditions and low pay? This paper reports on a study of 49 physicians who participated in focus groups and 63 physicians who completed questionnaires as part of the Uganda Health Workforce Retention Study. This study was part of a larger project that took place in 18 Ugandan

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hospitals and had a total sample size of 641 health workers overall (Hagopian *et al*., 2009). The motivation for the study was to assist Uganda's Ministry of Health to understand which policy reforms might be most effective in strengthening and expanding the health workforce. We explore physician reasons for staying, how satisfied they are with their current positions, what could entice them to stay longer, and their future career intentions.

STUDY DESIGN AND METHODS

A team of 20 (largely Ugandan) field researchers were recruited and trained in July 2006, to collect both qualitative and quantitative data from health workers in 18 hospitals in nine randomly selected districts in Uganda.

Facility selection was accomplished using a stratified random sampling weighted for population size of Uganda's 56 (pre-redistricting) districts to choose nine total districts for the study. We deliberately selected three districts considered rural ''hard to reach,'' defined by an algorithm developed by the Ministry of Health. The population weighting was done to ensure results would be generalizable to the nation. Two facilities were selected in each of the nine districts. The first hospital in each district was a randomly-selected Ministry (public) district hospital; the second was the next closest private not-for-profit facility.

Each four-member field research team covered two hospitals per district per week over a 3-week period. Health professionals currently in post in those facilities completed a 30 min questionnaire about their job satisfaction and motivations, their work history, and the factors that would encourage them to stay or leave their positions. The questionnaires contained 77 questions, of which 11 were demographic, 61 were closed-ended, and 5 were open-ended. Most of the closed-ended questions asked respondents to rank their agreement with statements offered on a 5-point scale, or to rank the importance of a factor (such as salary) on a 3-point scale. We included workers in our sample from the day, evening, and night shifts.

Focus groups were conducted in each facility according to cadre (one with nurses, one with doctors, and one with allied health and pharmacy staff, combined). We conducted a total of 56 focus groups, 11 of them with physicians (or in a couple of cases, physicians along with mid-level clinical officers). On the occasions where physicians and clinical officers met together, we did not differentiate their remarks. A team at Makerere's Institute for Social Research analyzed transcripts using a software package, N6. This paper focuses solely on the physicians in our study, although comparisons are made to other cadres where appropriate.

Epi Info was used for data entry, and all questionnaire data were entered twice to detect and correct errors. Statistical analysis was done in SPSS for the Macintosh 11.0.4. We used simple frequencies, cross-tabulations for categorical variables, *t*-tests for continuous variables, linear regression and logistic regression to analyze our data.

The Ministry of Health and the Uganda Health Workforce Advisory Board approved the project proposal. The Uganda Council for Science and Technology (HS 156) and the University of Washington (06-1098-G 01) approved the protocols for

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use of human subjects, after extensive review and revisions of procedures and consent material.

The study sponsors included two US government-funded agencies and three universities (see acknowledgements). In collaboration with the Ministry of Health, personnel from those organizations designed the study together and collaborated in data collection, analysis, interpretation, writing the report, and in the decision to submit the paper for publication.

There are limitations to this study. When we arrived at the facilities, we relied on volunteers to participate in focus groups and answer our surveys. We believed we were able to identify and include almost all the physicians present in the facilities we visited (with the exception of the largest hospital in our sample), although some physicians were away at private practices or on study leave, so we surely missed some individuals we would have preferred to include in our study. The physicians who participated in our study may have had fewer outside opportunities than their colleagues who were not available, which could lead to potential bias in the physician data.

There are estimated to be only 2500 physicians in all of Uganda (Reference: Uganda Medical and Dental Physician Council, personal communication, January 2008), so our sample—as a proportion of all physicians—represents about 3% of the physicians in the country. Because a large number of the physicians in Uganda are working in roles other than clinical practice, our sample may be more representative of physicians in practice.

FINDINGS

Our study used both quantitative and qualitative methods for collecting data from physicians in Ugandan hospitals. There were 63 physicians who answered our questionnaires, comprising 10% of all the questionnaires we collected for a larger study on Ugandan health workforce satisfaction, motivation, and intent to stay. Additionally, we conducted 56 cadre-specific focus groups, 11 of which included a total of 49 physicians at 10 facilities.

Demographic information

Most physicians in the study were male (90%), and most were married (61%; Table 1). Their ages ranged from 26 to 70, with an average of 36 years, and a median of 33 years, making them younger than those in other cadres. The average physician reported having 6.5 dependents, fewer dependents than their counterparts in other cadres. The range of number of dependents was 0 to 30.

Most physicians were in their first jobs (58%), and had, on average, been in their professions almost 10 years, and in their current positions an average of 6.5 years.

Satisfaction and intent to stay

Only 37% of physicians who answered the questionnaire said they were satisfied, overall, with their jobs. Physicians ranked several markers of satisfaction lower than

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Table 1. Demographic and job characteristics, stratified by cadre

Demographic and job characteristics	Medical officer ($N = 62$)	Allied health ($N = 89$)	Clinical officer ($N = 54$)	Nursing ($N = 344$)	Pharmacy ($N = 21$)	Other ($N = 47$)	Significance
Age in years	36.3	38.9	38.9	39.5	42.7	40	0.156
Male	90%	83%	78%	11%	67%	21%	0.000
Married	61%	83%	74%	57%	62	59	0.000
Average number of dependents	6.5	7.4	7.9	6.8	7.6	7.4	0.626
First job	58%	74%	87%	85%	84%	90%	0.000
Years since first licensed	9.9	13.2	12.8	14.8	15.9	7.8	0.000
Years in organization	7.9	11.2	11.8	13.4	13.9	15.4	0.001
Years in facility	6.5	9.1	8.5	10.2	9.2	15.2	0.000

Data source: questionnaire administered to 641 health workers in 18 Uganda hospitals, July 2006.
Note: the *N*s provided vary slightly for each question, depending on the number who answered each question.

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did other types of health workers: the morale in their department (average 2.9 on a scale of 5), receiving recognition for doing good work (2.8), or feeling they have the flexibility to balance the demands of work and personal life (2.8). They reported the lowest ratings on having the supplies they need to do their jobs well (2.8), or that their facilities had good access to drugs and medications (2.9; Table 2).

Physicians, compared to the other cadre in our study, are the group most likely to say they are eager to leave their jobs within 2 years (57%) and most at risk for leaving Uganda or the health sector, with 46% saying they would leave if they could (Table 3). Using logistic regression, we found the odds of reporting an intent to stay on the job at least 3 years were significantly lower for physicians (OR .2, $p = 0.004$) compared to the reference group of nurses in the study, adjusted for other factors in the model, including age, gender, and sector.

In focus groups, physicians described their view of alternate employment opportunities. In most nations, migration of physicians tends to occur from the public to the private sector, from rural to urban districts, and from poor countries to developed countries (Mullan, 2002). Our focus group physicians spoke of sector migration in both directions (private to public and public to private), but spoke less often of out-of-country migration. No physicians mentioned migrating beyond other ''less poor'' African countries like South Africa or Kenya, and none mentioned specific countries such as the United Kingdom, European nations, or the United States.

Working and living conditions

Eight issues emerged from focus group data analysis with regard to working conditions. These included quality of management, availability of equipment and supplies (including drugs), facility infrastructure, staffing and workload, political influence, community and location, professional development, and salary and benefits (Figure 1).

Quality of management

In questionnaires, physicians were the least likely to say their immediate supervisor (presumably, upper management) ''cares about me as a person,'' and the least likely to say they received recognition for doing good work.

The qualitative data showed more variation. In one focus group at a private facility, physicians spoke of supervisors who respected staff, assisted in problem solving, and instilled a sense of ownership and responsibility in staff. At another public facility, physicians said management gave appropriate autonomy to staff, while still providing adequate supervision.

Availability of equipment, supplies, and drugs

There are significant problems with working conditions in all health facilities. Access to equipment, supplies, drugs, electricity, and water are seriously compromised. Fewer than half the physicians (42%) said they had the supplies (e.g., gloves, needles, and

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Table 2. Job satisfaction and working condition measures that vary significantly by cadre, stratified, ranked from most to least satisfied, by physicians

Characteristics	Medical officer	Allied health	Clinical officer	Nursing	Pharmacy	Other	Significance
When I come to work, I know what is expected of me	4.3	4.6	4.7	4.6	4.5	4.5	0.007
I have a good friend at work	4.1	4.3	4.2	4.3	4.1	4.5	0.040
I am actively involved in helping to make this a great health care facility	3.8	4.3	4.1	4.3	4.4	4.5	0.000
I consider myself a part of this community	3.7	4.1	4.2	4.2	4.4	4.5	0.000
At work, I have good access to electricity	3.7	3.0	3.1	3.2	3.1	2.7	0.004
The job is a good match for my skills and experience	3.6	4.2	4.2	4.3	4.2	4.4	0.000
I would encourage my friends and family to seek care here	3.6	3.7	4.2	4.1	4.0	4.6	0.000
At home, I have good access to electricity	3.5	2.4	2.4	2.8	2.7	1.9	0.000
My immediate supervisor cares about me as a person	3.3	3.7	3.5	3.5	3.9	4.0	0.006
The organization takes specific measures to protect me against HIV/AIDS	3.3	3.2	3.2	3.5	3.2	3.8	0.052
I have safe and efficient transportation to work	3.1	2.3	2.2	2.3	2.9	2.0	0.000
This facility has good access to drugs and medications	2.9	3.3	3.6	3.6	3.8	3.6	0.002
Overall, the morale level at my department or section is good	2.9	3.2	3.0	3.1	3.5	3.6	0.020
I receive recognition for doing good work	2.8	3.5	3.3	3.4	3.7	3.9	0.000
I have flexibility to balance the demands of my workplace and my personal life	2.8	3.6	3.7	3.6	3.6	3.9	0.000
I have the supplies I need to do my job well and safely (gloves, needles, bandages, etc.)	2.8	3.1	3.3	3.3	3.0	3.9	0.000
I can take time to eat lunch almost every day	2.8	3.0	2.9	2.3	3.0	2.8	0.000
I have the equipment I need to do my job well and efficiently (ultra-sound, x-ray, blood pressure cuffs)	2.8	2.8	3.4	3.2	2.9	3.6	0.005
Considering everything, I am satisfied with my job	2.8	3.0	3.1	3.2	3.7	3.6	0.006
The workload is manageable.	2.7	3.1	2.4	2.6	2.8	3.0	0.007
I have been abused (physically, emotionally, verbally) by patients/their friends/family members	2.2	2.0	2.3	2.4	2.5	2.0	0.017
I have been abused (physically, emotionally, verbally) by a supervisor	2.0	2.3	2.4	2.5	2.3	2.2	0.040

Data source: questionnaire administered to 641 health workers in 18 Uganda hospitals, July 2006.
Note: satisfaction scores are on a scale of 1–5, with 5 = strongly agree, 3 = neutral, and 1 = strongly disagree.

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Table 3. Portion of respondents, by cadre, who say they want to leave Uganda, the health sector, or a current health job

Characteristics	Medical officer $N = 56$	Allied health $N = 82$	Clinical officer $N = 53$	Nursing $N = 322$	Pharmacy $N = 16$	Other $N = 41$	Significance
Eager to leave job within 2 years	57%	27%	23%	20%	13%	12%	.000
Intent to stay in job at least 3 more years	43	73	77	80	87	88	
Characteristics	Medical officer $N = 52$	Allied health $N = 68$	Clinical officer $N = 39$	Nursing $N = 254$	Pharmacy $N = 10$	Other $N = 32$	Significance
High risk of leaving Uganda or the health profession	46%	12%	18%	10%	20%	91%	.000
Willing to stay in Uganda and work in health care	54	88	82	90	80	9	

Data source: questionnaire administered to 641 health workers in 18 Uganda hospitals, July 2006.

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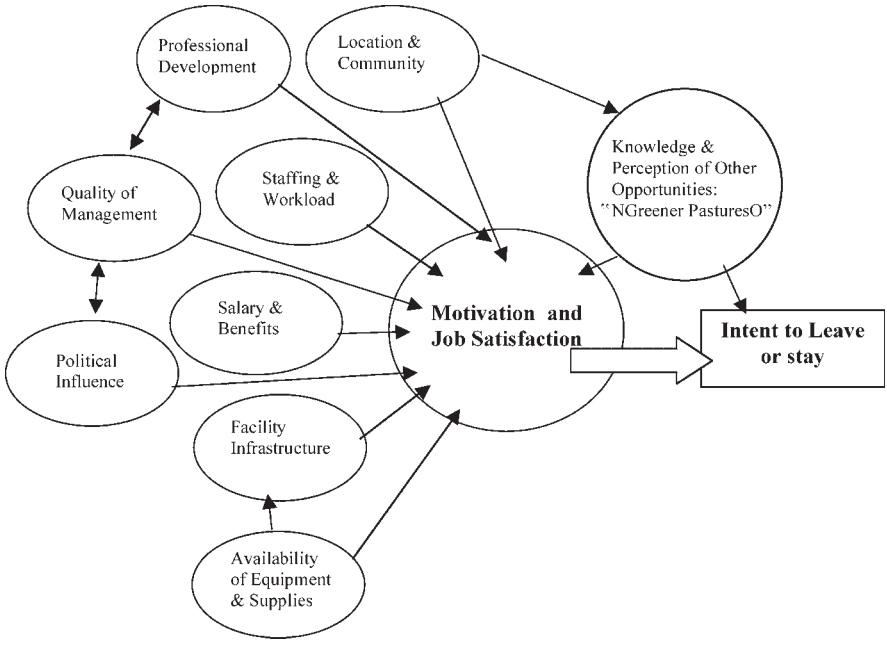

Figure 1. Model of physician satisfaction and intent to stay in positions derived from data gathered for this study

bandages) they needed to do their jobs well and safely, although slightly more (44%) said they had the equipment (e.g., X-ray equipment, lab equipment, and basic tools such as blood pressure cuffs) they needed. Fewer than half (43%) also said they had good access to drugs and medications.

Physicians (and other health workers) in the private (non-profit) sector were more likely to rate working conditions more highly, with statistically significant differences measured for the availability of supplies, equipment and drugs, utilities, transportation, and time for workers to eat lunch. We observed that while some hospitals had full-time electrical power supply with standing generators, other places had frequent power outages. Some facilities had no backups even in operating theaters. Some hospitals did not have ambulances.

One physician said:

> Then another thing is equipment. We are doing operations but we don't have some equipment like theatre lights. After complaining we were given a tube for operation, but even in the whole ward we don't have enough lights. And can you imagine the whole of this hospital with only two oxygen concentrators? At least every ward should be having one or two. We have only one for the pediatric ward after complaining for so long. So if you are using it on the child, and someone else needs it you either remove the child to die or you wait for the other to die.
>
> [Physician, public]

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Facility infrastructure

Running tap water in Uganda is not generally considered safe to drink without boiling or other treatment. Only 64% of physicians in our survey said they thought hospital access to safe, clean water was sufficient. Somewhat more, 68%, said access to electricity in their hospital was acceptable. Physicians in five of the eight focus group discussions complained of infrastructure issues, complaining about a lack of clean water or electricity, not enough beds for patients or space in the wards, and poor infection control.

> I think we make our patients more sick in the hospital—somebody can come with one disease and go away with five diseases. The infection control is very poor mainly because the facility is so bad. Sometimes you have no soap to wash the hands. These are the hopeless situations when you are working in such a place that you feel very disgusted when you look at the bed, you look at the mattress on bed and you look at the bed sheets the patient is sleeping in.
>
> [Physician, public]

Working conditions like the facility infrastructure and access to supplies and equipment were considered by some physicians to be more important than salary or compensation. As one stated:

> Actually people are not looking for money when they go away (migrate), they are looking for good working environment. It is not only the money. Take an example, people are working in mission hospitals, when you want to do a surgery, things to be done are there, when you have done your good surgery the nurses will follow up the patients very well and you become satisfied that the patients have recovered, you have come to a diagnosis with the all things that are required and you treat the patients and they recover very well. And those people are there not because they are given a lot of money—the health staffs in mission hospitals are given half the pay of the nurse in public units—but they are there because the environment is good.
>
> [Physician, public]

Staffing and workload

Only about a third (36%) of physicians said they thought their workload was manageable. All focus group physicians complained about work overload. Physicians discussed staffing shortages, unreasonable patient loads, lack of available specialists, and positions that have gone unfilled for months or even years.

In some districts, physicians are on the payroll, but may come to work only half the day, largely because they are attending to private practices as a means of income supplementation. As one physician stated, ''If we have nine staff and six don't show up, three have to carry the load.''

One public hospital in our sample had only one active physician, even though the hospital's plan required five to seven staff physicians. The single physician was

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playing multiple roles in the facility, including acting as the medical superintendent, surgeon, and the on-call doctor. This is hardly sustainable, but despite the district posting the growing vacancies for multiple years, no applications had been received.

Political influence

Although we did not ask about political issues in our questionnaire because it was not an issue identified in the literature, we found that concerns about political influence in health issues arose in many of the focus group discussions with physicians. Uganda went through a process of decentralization relatively recently, and many health workers are still struggling with the effects on decision-making and funding for health services at the district level. Physicians complained of a lack of confirmation of their positions (now a district responsibility), interference by district-level politicians in the decision-making at health facilities, and intimidation of health workers by local politicians. For older physicians who operated before decentralization and used to report to the Ministry of Health, many felt that politicians with no health knowledge should not be put in a decision-making role for health issues in the district.

> We get political interference under decentralization. . . . They look at negative aspects of our work and comment badly, coming anytime even after midnight to our homes. This is a member of parliament. . . .
>
> [Physician, public]

Community and location

We asked about community characteristics and living conditions in our questionnaire, and these issues arose in focus groups as well. Only about a third (35%) of physicians in our survey agreed that they had good access to schooling for their children; many rural (''up country'') physicians in focus groups told us they had to send their children to live with relatives in Kampala to access adequate schools.

About a third (38%) said their access to transportation to work was safe and efficient. Only about a fourth (27%) said the community where they lived had good shopping or entertainment.

Physicians in ''hard to reach'' areas said in focus groups they have been greatly affected by the wartime conditions. As might be expected, those working in Kampala commented positively on their community and location, as the capital city offers many amenities.

There were no physicians in hard-to-reach areas who said they were satisfied with their jobs ($p = 0.004$), but there was no satisfaction difference by public or private status of the hospital. Intent to stay, however, was not associated with the hard-to-reach status of the hospitals where physicians were working. On the other hand, physicians in public hospitals were significantly more likely ($p = 0.006$) to say they would stay in their public employment jobs than private, non-profit, jobs.

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Professional development

Only about one fourth of physicians (26%) said their employer offered sufficient opportunities for promotion. A sizable number (66%) rated ''access to higher education'' as ''very important,'' and another large portion (60%) said this was an important enough issue for which to consider changing jobs.

Many physicians were frustrated by the lack of opportunities for study leave, learning in more high-tech or well-resourced environments, and the lack of promotion or growth available in the districts. One physician at a public hospital in a hard to reach area said, ''Job satisfaction includes professional development, and there is no provision to allow us to further our qualification.''

Compensation and job security

Health workers in the civil service in Uganda, as well as in many private non-profits, receive a ''consolidated pay package'' (Mugisha, 2003) that includes salary, housing (or an allowance therefore), meals at work, assistance with transportation, health care for family members, and terminal (retirement and death) benefits. This compensation scheme—lumping salary together with other tangibles—is a legacy of colonialism. Fewer than one in four of our surveyed physicians (21%) said they agreed that their salary package was fair. A large number of physicians rated salary as ''very important'' to them, but a similar number rated these other benefits as important as well. Health care for family members was rated as even more significant than salary (80% said ''very important'') (see Table 4).

None of the physicians in our focus group discussions felt their compensation was acceptable. Combined with a sense of job insecurity on the questionnaires (rated at 3.2, just above neutral), overall satisfaction is compromised by these issues.

Table 4. Importance of compensation factors ratings, stratified by cadre

Characteristics	Medical officer	Allied health	Clinical officer	Nursing	Pharmacy	Other	Significance
Salary	2.7	2.8	2.8	2.9	2.6	2.9	0.027
Terminal benefits (retirement, pension, etc)	2.7	2.8	2.7	2.9	2.6	2.9	0.060
Receiving a housing allowance	2.7	2.6	2.6	2.8	2.6	2.9	0.001
Assistance with transportation	2.6	2.4	2.7	2.7	2.4	2.8	0.001
Health care for my family	2.8	2.8	2.8	2.9	2.7	2.9	0.001
Food allowance	2.4	2.5	2.6	2.8	2.5	2.9	0.000

Data source: questionnaire administered to 641 health workers in 18 Uganda hospitals, July 2006.
Note: importance scores are on a scale of 1–3, with 1 = not important, 2 = somewhat important and 3 = very important.

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> The other problem is job security, in most cases you don't know where you will go, they can fire you at any time, the other thing is promotions are rare, [and] salary increments are not there.
>
> [Physician, non-profit]

DISCUSSION

Our study included 63 medical officers/physicians who had been reasonably stable in their positions, with an average 10 years in the profession, and in their current positions on average for 6 years. More than half (58%) were still in their first jobs. Nonetheless, we found the majority was highly dissatisfied and eager to leave their jobs, their country, or even their profession. Given that 14% of Ugandan physicians are already estimated to be practicing in one of four wealthy English speaking countries (Mullan, 2005), it does not bode well for the future stability of the health profession. Physicians were the least satisfied health worker type in our study. As many as 63% of physicians admitted to being dissatisfied on a range of satisfaction markers. Other studies have established an important link between physician dissatisfaction and departure from the health system or even their country. Bruce showed that in the United States, very dissatisfied physicians were more likely (2 to 3 times) to retire early (Bruce *et al*., 2005). Further, he warned, unhappy doctors give lower quality care and discourage others from joining the profession. Work by Buchbunder also related high turnover among primary care physicians to high levels of dissatisfaction (Buchbinder *et al*., 2001).

Dissatisfaction among doctors has also been cited in Germany as a reason for increases in medical school drop out rates and for leaving the country (Janus *et al*., 2006). The German study also described a 2006 physician strike for higher wages and better working conditions. Uganda has also endured several strikes among health workers, an indication that dissatisfaction among health workers can be very disruptive.

Our study identified some of the factors associated with high levels of dissatisfaction among physicians in Uganda. In addition to salary, these include quality of management, availability of equipment and supplies (including drugs), quality of facility infrastructure, staffing and workload, political influence, community location, and professional development.

Level of compensation was particularly important. Less than one quarter of those surveyed were satisfied with their compensation. One of the longest-standing scholars of worker satisfaction, Frederick Herzberg, described salary as a ''hygiene'' factor; that is, when salary is not at an adequate level, it is a de-motivator, but adequate salary alone is not a motivator (Herzberg, 1959). Our study found salary ranked very high among health workers' concerns, and was a major cause of dissatisfaction, particularly among physicians. It is the most frequently cited reason physicians gave for running several jobs and for considering leaving one's job and country. An important area for additional study is the apparent propensity of physicians who work in the public sector to conduct private practices on the side and are thus decreasing the access to health care for those who need to use the public system.

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While physicians in our study were relatively young (age 36 on average), they were shouldering a heavy economic and social burden with an average 6.5 dependants each. Having a large number of dependents can be stressful in any environment, but in the setting of low wages, such as Uganda, it can be particularly difficult.

The ''push and pull'' theory of migration was explored by Lee in 1966, whose work has been applied to the study of physician migration, and subsequently by Akl (Lee, 1966; Akl *et al*., 2007). When a pull factor in a destination country is at work, the absence of that factor in a donor country acts as a push factor. We created a conceptual model of similar factors influencing physician migration in Uganda, based on existing theories as well as our own findings. Figure 1 attempts to illustrate the complexity of the issues, and how various factors interrelate. The awareness of the availability of ''greener pastures'' abroad influences both intent to leave as well as underlying job satisfaction.

Other studies of physician satisfaction also conclude this is a complex phenomenon and cannot be addressed by a single intervention. Factors certainly include fair and adequate financial compensation, but also non-monetary issues, such as relationships with patients and colleagues, community and supervisors, career development, autonomy (ability to exercise independent medical judgment), availability of resources to effectively execute responsibilities, control of time off, access to medical information, professional goal attainment, satisfaction with the community, and job security. Our findings parallel these.

Kotzee and Couper (2006) also concluded from their study of South African doctors that addressing one isolated factor is unlikely to avert the brain drain. Likewise, Franco described the importance of harmonising three interrelated categories of issues, including ''internal or individual'' factors such as professional development; ''organizational or work context'' factors like organizational structure and culture, and ''community, cultural, or client'' influences, such as provider patient relationships and community support for health care providers (Franco *et al*., 2002).

It is of concern that physicians in our study were—compared to other licensed health professionals in Uganda—by far the most dissatisfied, most eager to leave, and most equipped to vacate should an opportunity arise. Physicians are also the group (together with the nurses) that is most highly sought after by international recruiting agencies. Investing in health workers is also an investment in the economy of the nation, as a well functioning health system attracts business investors. The World Bank and International Monetary Fund, whose ''structural adjustment'' policies put limitations on health spending at a country level have been particularly onerous, and have been continually advised on this by international advocates for health care systems (George, 1990; WHO, 2008).

CONCLUSION

Physicians in Uganda work for poor remuneration, under very challenging conditions, without adequate support. Despite their level of dissatisfaction, some doctors stay and continue to render invaluable (even if constrained) service. They are

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paying a high price in the form of overwork, stress, emotional detachment from their work, low levels of job satisfaction, and low self-esteem resulting from having to provide compromised care.

Relying on this study, policy makers should want to prioritize infrastructure upgrades, provision of adequate equipment, and ensuring the needed supplies and medications to provide effective care. Management practices can ensure physicians and other health care workers are properly supervised, strategically deployed, and treated fairly, without harassment or intimidation. Pre and post-service training in leadership and management should be offered to all to whom management of health human resources is entrusted.

The physicians in our study are still in the country and working in hospitals. The majority, however, are very dissatisfied and on the verge of leaving. Physicians who elect to remain in service in the countries where they were reared and trained should be rewarded and recognized for their service. This paper has identified factors that could elevate physician job satisfaction, motivation, and intent to stay. Time, however, is not on our side.

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