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Engaging Informal Providers in TB Control:
What Is the Potential in the Implementation of the WHO Stop TB Strategy?
A Discussion Paper

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Healthcare Sector of Georgia

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From the Editor-in-Chief

This issue of *World Health & Population* presents an interesting and highly varied set of papers that have been published online by *WHP*. They are selected here as representative of outstanding recent contributions to the journal and include a discussion paper on healthcare implementation strategies for TB control, as well as country-specific papers from South Asia, sub-Saharan Africa and the Caucasus.

The initial paper in this volume, “Engaging Informal Providers in TB Control: What Is the Potential in the Implementation of the WHO Stop TB Strategy?” by Berthollet Bwira Kaboru et al. represents a collaboration between the Karolinska Institute in Stockholm and the World Health Organization (WHO) in Geneva. The authors point out that although informal providers/traditional health practitioners are routinely used in direct service delivery, they are underutilized across the other aspects of the WHO Stop TB Strategy, including enhancing prevention and improving adherence, exploring collaborative TB/HIV activities, strengthening health systems and delivering health services. Recognizing that most healthcare in resource-constrained countries is still delivered by traditional practitioners, the authors recommend that national tuberculosis programs explore more fully leveraging this resource and talent for Stop TB initiatives.

In “Privatization and Management Development in the Healthcare Sector of Georgia,” authors Daniel West, Michael Costello and Bernardo Ramirez describe the ongoing challenges of one of the newly independent states (NIS) of the former Soviet Union converting from the Soviet model of healthcare to a more western model. The article contains very interesting background on Georgia as an NIS (and other Central and Eastern European countries by implication). The authors focus on the provision of healthcare sector management education and training – and partnerships with US-based institutions in particular – as one key component for successful development of a new, decentralized and privatized healthcare system. The training partnerships are promising and are beginning to address the greatly increased demand for healthcare leaders, administrators and managers.

The third paper in this issue is a study of health-seeking behaviours and practices in rural, mountainous areas of Pakistan. In “Treating Common Illnesses among Children under Five Years: A Portrayal of Health-Seeking Behaviours and Practices in the Northern Areas of Pakistan,” Babar Shaikh and Dave Haran report on a cross-sectional survey consisting of 539 interviews in 25 villages. Their conclusions fit well within the classic knowledge–attitudes–practices paradigm: lack of knowledge about the child’s illness and not making it a priority were key factors behind a median 2–3 days delay in seeking care. The authors conclude that health education and health promotion programs must address the knowledge gaps about children’s illnesses and advocate appropriate health-seeking behaviours. Issues around quality of care in public health centres, and affordability in the private health sector, must also be addressed in order to improve health service utilization.

The final paper in this issue, “Religion, Condom Use Acceptability and Use within Marriage among Rural Women in Malawi,” was submitted by Adamson Muula and colleagues at the Gillings School of Global Public Health. This team has a long history of high-quality HIV research in Malawi. The current paper uses data from the Malawi Diffusion and Ideational Change Project (MDICP), a collaborative research project between the University of Malawi and the University of Pennsylvania. The sample size was a relatively large 1,664 ever-married women across 145 villages in three rural districts of the country. Rigorous cluster sampling strategies were applied. Muula et al. explore the impact of religious affiliation on condom acceptability and use within marriage. Counter to their hypothesis of finding differences between the faiths, the research showed that Christian women in rural Malawi were no more or no less likely to accept condom use than Muslim women, and that there was also no difference in attitude toward condom use within marriage among Malawian

women. Acceptability of condom use when the partner is suspected or known to be HIV positive was high; however, reported use overall was much lower. Again within the knowledge–attitudes–practices paradigm, the authors report the “a positive attitude alone is not enough to influence behaviours.”

In conclusion, we hope that you find the papers in this issue interesting and worthwhile and that you will also consult others recently released online at www.worldhealthandpopulation.com. *WHP* remains committed to its mission to provide a forum for researchers and policy makers worldwide to publish and disseminate health- and population-related research, and to encourage applied research and policy analysis from diverse global and resource-constrained settings. *WHP* is indexed on MEDLINE and is accessible through PubMed.

We look forward to continued enthusiastic submission of manuscripts for consideration, peer review and publication. Finally, the editors and publishers of *WHP* are always interested in any comments or suggestions you might have on the papers or about the journal and our mission. Please feel free to write or email us.

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Engaging Informal Providers in TB Control: What Is the Potential in the Implementation of the WHO Stop TB Strategy? A Discussion Paper

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Abstract

The World Health Organization (WHO) Stop TB Strategy calls for involvement of all healthcare providers in tuberculosis (TB) control. There is evidence that many people with TB seek care from informal providers before or after diagnosis, but very little has been done to engage these informal providers. Their involvement is often discussed with regard to DOTS (directly observed treatment – short course), rather than to the implementation of the comprehensive Stop TB Strategy.

This paper discusses the potential contribution of informal providers to all components of the WHO Stop TB Strategy, including DOTS, programmatic management of multi-drug-resistant TB (MDR-TB), TB/HIV collaborative activities, health systems strengthening, engaging people with TB and their communities, and enabling research.

The conclusion is that with increased stewardship by the national TB program (NTP), informal providers might contribute to implementation of the Stop TB Strategy. NTPs need practical guidelines to set up and scale up initiatives, including tools to assess the implications of these initiatives on complex dimensions like health systems strengthening.

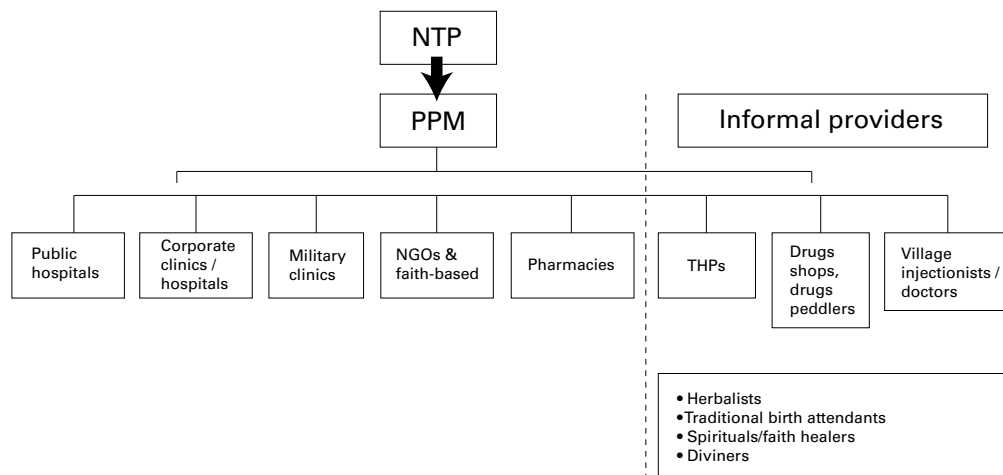
Introduction

Formal and Informal Providers in Healthcare

Globally, people resort to an array of health providers – public, private, qualified and non-qualified – as well as to self-medication to respond to their healthcare needs. Many factors, including the perceived nature and severity of the disease, geographical accessibility, financial constraints, providers’ attitudes, cultural sensitiveness, and so forth, determine people’s choices among different types of healthcare providers.

The World Health Organization (WHO) recommends that all available healthcare providers be involved in tuberculosis (TB) control. Generic public–private mix approaches (PPM) have been developed to provide TB control programs with recommendations on how to engage all relevant providers outside the network of the national TB control program (such as public institutions outside of ministries of health, businesses, individual private medical practitioners, practitioners of traditional medicine, etc.). These non-state providers can be purposefully divided into formal and informal ones (Travis and Cassels 2006). Figure 1 provides an overview of the different types of formal and informal private providers.

Figure 1. Informal providers as integral part of PPM approaches



NTP = National Tuberculosis Program; PPM = public–private mix; NGO = non-governmental organization; THPs = Traditional Health Practitioners.

Informal providers are defined here as individuals working independently (not accountable to any institution or organization), providing health-related services in a context not formally structured or clearly regulated (e.g., practitioners of traditional medicine in African countries); or practitioners not fully qualified to provide the type of services they offer (e.g., non-qualified providers, village doctors, drug shops, village injectionists, etc.) (Figure 1). The line between formal and informal practice might be blurred at times. It is in reality the characteristics of the practice that determine whether it is formal or informal, rather than the practitioner per se. For instance, while a pharmacy registered as operating under supervision of a qualified health worker – even if in reality the services are provided by under-qualified staff, is part of the formal sector, small shops selling similar drugs alongside foodstuffs or ambulant drug sellers moving from one market to another with a stock of drugs are regarded as informal providers. Moreover, “informal” does not necessarily mean illegal. A country’s healthcare regulations may well allow informal providers to practise in a number of ways, while restricting a number of functions, such as prescribing certain drugs, to formally certified

practitioners. It is also common to find practitioners involved in both formal and informal practice. In such a case, from our standpoint, a qualified health worker who, besides his or her formal work in the public or private health sector, practises traditional medicine is seen as informal provider when performing those services.

The Use of Informal Providers by TB patients

The contribution of informal providers in healthcare is not well documented, yet there are indications that significant proportions of people with different ailments seek care from informal providers. Use of informal sources of care is substantial among TB patients prior to TB diagnosis. Several studies found that informal care providers were the first choice of many TB patients. The proportion of reported use of traditional medicine ranged between 10% of TB patients in a rural district in South Africa (Wilkinson et al. 1999) to 85% of hospitalized children in Ethiopia, of whom 34% had TB (Schneider et al. 1989). In Malawi, between 30% and 40% of TB patients reported having been to traditional healers (THs) prior to seeking medical care (Salaniponi et al. 2000). Another study from South Africa found that 58% of the interviewed TB patients had sought care from THs before coming to hospital (Barker et al. 2006). The use of drug shops by TB patients was reported as 30% in Malawi (Salaniponi et al. 2000) and 40% in Uganda (Kiwuwa et al. 2005). Informal providers might be seeing even higher proportions of people with TB, since the figures above relate only to people with TB who end up coming into contact with National Tuberculosis Control Programs (NTPs) or their partners. Little is known about healthcare seeking of people infected with TB who remain undiagnosed, or who are diagnosed outside the public network of TB care and whose case is not reported to the NTP.

The WHO Stop TB Strategy: Where Do Informal Providers Fit?

Within the framework of the Millennium Development Goals (MDGs), the WHO and the Stop TB Partnership developed a plan targeted to detect and treat at least 70% of sputum smear-positive TB cases, with at least 85% of those cured by 2005; to reduce the global TB burden by 50% by 2015 relative to 1990 levels; and to bring the global incidence of active TB to less than one case per one million population per year by 2050 (Stop TB Partnership 2006).

To achieve these targets, the WHO launched the Stop TB Strategy, which is broader than the implementation of directly observed treatment – short course (DOTS) alone. The strategy comprises the following components:

- Pursuing DOTS expansion and enhancement
- Addressing TB/HIV, MDR-TB (multi-drug-resistant TB) and other challenges
- Contributing to health systems strengthening
- Engaging all healthcare providers
- Empowering people with TB, and communities
- Enabling and promoting research

There is an increasing consensus about the importance of NTPs' nurturing initiatives that systematically link all available healthcare providers and actors, including informal providers, in TB prevention and care. Most of the discussion on involving all healthcare providers has so far concentrated on improving collaboration among public sector providers, the formal segments of the private sector, and the corporate and non-governmental providers (Lönnroth et al. 2004). However, "all" providers implies more than qualified practitioners, or practitioners of Western medicine. The call for all providers' involvement is equally relevant for informal providers.

The potential contribution of informal providers to TB control is largely undocumented and unexplored. The few published studies on this topic have concentrated on DOTS-related aspects: identification and referral of TB suspects, treatment supervision and preventive work. This paper proposes to take the discussion further, that is, on the potential contribution (opportunities,

challenges and risks) of informal providers' with regard to implementing all components of the WHO Stop TB Strategy. In other words, the paper examines what the role of informal providers might be with regard the above-mentioned components of this strategy.

Expansion and Enhancement of High-Quality DOTS

Case Detection and Treatment Supervision

Case detection is concerned with both the number of TB cases detected (as many cases as possible) and the timeliness of the detection (early enough). A literature review showed that delays from the onset of symptoms to the first contact with a DOTS centre are highly variable, between 4 and 12 weeks (Thomas 2002). Shortening diagnostic delays (both patient and health systems delays) is an important issue in case detection. A relationship has been found between resorting first to informal providers (traditional health practitioners [THPs], drug shops, etc.) and longer delays to seek formal care, resulting in adverse treatment outcomes (Barker et al. 2006; Mesfin et al. 2009). Establishing mechanisms for timely referral from informal providers might thus impact positively on detection rates.

Supervision of DOTS by THPs was found to be at least as good as that performed by clinicians and community members (Colvin et al. 2003). However, similar studies are rare and thus pilot interventions are needed to understand the mechanisms, incentives and enablers for using THPs as DOTS supervisors. One compelling and unique example is the involvement of village doctors in DOTS implementation in Bangladesh: 11% of all TB cases detected in the areas concerned were referred by village doctors, who provided between 20% and 45% of directly observed treatment, with a treatment success rate of 90% throughout the period from 1998 to 2003 (Hamid Salim et al. 2006).

Addressing TB/HIV, MDR-TB and Other Challenges

Addressing Misconceptions (and Enhancing Prevention)

Issues of common interest in TB and HIV include the persistent claims of TB and HIV cure among informal providers. Such claims represent a matter needing serious scrutiny. Peltzer and colleagues found that 21% of THPs believed there was a cure for AIDS (Peltzer et al. 2006), just as another study from Malawi reported on THPs claiming to cure TB with traditional remedies (Banerjee et al. 2000). This is consistent with widespread perceptions in some communities that TB (like HIV) is a result of magic, a curse, or punishment from God (Edginton et al. 2002). Such messages might slow uptake of vital services such as voluntary counselling and testing for HIV as well as TB screening. For informal providers to serve as an entry point to TB/HIV screening (rather than a delaying "station"), mutual understanding and functioning referral channels to both TB and HIV screening centres (and between them) are required.

Engaging community injectionists in TB might benefit HIV prevention. One study from Uganda reported of extensive use of injections in the informal sector, which raised serious concerns with regard to transmission of HIV. Only a few of these neighbourhoods' "needle men" had been trained to perform the procedure in question (Birungi 1998). This also applies to some traditional practices that put THPs and/or patients at risk of HIV infection. Collaborative frameworks providing training and information opportunities might be ideal arenas in which to address such problems.

Enhancing Adherence: Preventing Drug Resistance Development and Amplification

As far as adherence is concerned, studies from industrialized countries show that use of alternative and complementary therapies is associated with HIV patients not taking antiretroviral (ART) medication, not adhering to the regimen or not regarding ART as beneficial (Owen-Smith et al. 2007). In the African setting, it has been argued that any conflict between traditional and Western medicine will be detrimental to adherence for both TB and HIV patients, as well as co-infected ones. Fear has recently been expressed over patients defaulting from ART programs for herbal remedies (Ahmad 2007).

Mills and colleagues found that use of some African herbal remedies would affect ART metabolism, increasing risk of drug failure and toxicity in the case of parallel use (Mills et al. 2005). No

data exist on the extent of simultaneous use of informal and formal care by TB patients under DOTS, although such practices are likely to be recurrent. Involvement of informal providers would contribute to reducing the frequency of parallel use of medications and therefore mitigate the risks of interactions, adverse effects and drug failure in TB/HIV co-infected patients.

As to strengthening management of MDR-TB and prevention of extensively drug-resistant TB (XDR), available (unpublished) data from the WHO show that in Bangladesh engaging the over 10,000 village doctors (informal providers) is contributing to diagnosis and treatment of patients with resistant TB. Village doctors act as MDR field supervisors; they visit the patients at least four times during the ambulatory treatment phase (after the intensive phase in hospital). Their role in MDR management is to provide DOT, help identify and counsel patients about side effects, and help ensure that follow-up tests and clinical checkups are done on schedule. Currently, village doctors provide 90% of ambulatory care for MDR-TB patients, with remarkably high treatment outcomes: 89% cure rate, 5% death rate and 1% failure (Lönnroth 2009).

Opportunities for Collaborative TB/HIV Activities

Any involvement of informal providers in TB control will benefit HIV control efforts and vice versa. The HIV control arena has been more active than TB control in attempting to engage informal providers, yet such initiatives have largely been on a limited scale (UNAIDS 2002). Given TB/HIV co-morbidity, substantial proportions of TB patients in high HIV prevalence settings are in need of palliative care. In this respect, strengthened collaboration with informal providers would contribute to provision of palliative care, including the psychosocial support that most AIDS/TB patients need in later stages of the diseases (Kang'ethe 2009).

Health Systems Strengthening

Health systems strengthening is increasingly recognized as a cross-cutting and strategic issue in all WHO work. The WHO's framework for action defines a health system as "all organizations, people and actions whose primary intent is to promote, restore or maintain health" (WHO 2000: 5). Regarding the content of a health system, *The World Health Report 2000* stated in explicit terms that "formal health services, including the professional delivery of personal medical attention, are clearly within these boundaries. So are actions by traditional healers, and all use of medication, whether prescribed by a provider or not" (WHO 2000: 5). According to this definition, informal providers are an integral part of health systems (Travis and Cassels 2006). Any attempt to strengthen relationships between providers in the public, private (including non-governmental organizations) and other informal sectors constitutes health systems strengthening actions.

It is essential, but also challenging, to demonstrate that increased involvement of informal providers in TB care is beneficial to the whole health system's structure, that is, to the six blocks building a health system. These building blocks are (1) delivery of health services, (2) human resources for health, (3) health information systems, (4) medical products and technologies, (5) health financing (collecting, pooling and purchasing) and (6) stewardship (WHO 2006: 3).

Delivery of Health Services

There are indications that significant numbers of TB patients seek care from informal providers. Building formal relationships between these providers and NTPs would potentially improve access to and uptake of standardized and quality-assured TB care and other medical conditions. Indications for increased service delivery might include referral of patients from informal providers to TB screening centres, more TB patients receiving supervision from informal providers, more patients co-infected with TB/HIV getting palliative care or counselling from informal providers, and so forth. Thinking from a systems perspective, one would also argue that informal providers involved in TB care should be prepared and empowered to assist in other aspects of health services, such as maternal and child health.

Challenges and suggestions for solutions on engaging informal providers

Identification of genuine informal providers. It is generally believed that an important proportion of informal providers are less than genuine, and that they deceive patients and put their lives at risk. Lack of a professional organization with capacity for self-regulation and control contributes to difficulty of controlling these providers.

Qualification/literacy of informal providers. Low literacy levels are another challenge to programs targeting informal providers. As a rule, providers' experience with caregiving, recognition by the community and willingness to get involved in TB control should be taken as criteria for qualification of informal providers. Low literacy should not be an exclusion criterion. It should be up to program managers to design strategies that respond to the needs of less-educated informal providers.

Quality assurance of services provided by informal providers. This is a consequence of the previous two challenges. Care should be taken so that involvement of informal providers is not used as validation of other, non-evidence based, practices they may be involved in.

Antagonisms/lack of trust between informal providers and formally trained medical and paramedical personnel. Medical and paramedical personnel are often accused of looking down on informal providers (mainly traditional healers) and of scolding patients who disclose their visits to informal providers. Strategies to address this antagonism and to empower informal providers and patients should be put in place by programs seeking to engage these providers.

Capacity of NTPs to coordinate this new and large group of providers. National Tuberculosis Programs will need strengthened capacity to oversee this process. First of all, a shift in attitudes, implying more openness, is required.

Promotion of a sector-wide perspective. Gains and challenges in relation to involving informal providers in TB care needs to be assessed and addressed within the perspective of health systems, rather than in vertical terms.

patients are not charged unnecessarily by informal providers. NTPs' alignment with other disease control programs and with the basic primary care system is an essential component in the financing element. Mobilizing resources to finance incentives schemes and compensation for specific tasks for informal providers – sustaining their involvement in delivering TB services free of charge – are just a few ways of financing health services.

Health Workforce

In line with the WHO's definition of health workers as "all people engaged in actions whose primary intent is to enhance health," (WHO 2006: 16) informal providers are an integral part of a country's health workforce. Many low-income countries experience shortages of personnel, a skills-mix imbalance, a weak knowledge base and so forth. Thus, positive engagement of informal providers in TB control strengthens the overall health system. In line with current debates on task shifting, a well-designed delegation of tasks between formal and informal providers could help achieve a lot. Task-shifting schemes would allow medical and other qualified clinicians to concentrate on the most complicated tasks. This should be a result of careful task analysis and well-developed task distribution. In addition to task distribution, involving informal providers in TB control raises its own range of challenges that require consideration; these include identification of genuine providers, the structure of their professional organization (if any) and the quality assurance of the services they provide (see Box 1).

Health Financing

Improvements in financing include better mobilization of financial resources from national budgets, health insurance, out-of-pocket expenditures and external sources. NTPs have prime responsibility for this function of resource mobilization, as well as to ensure services are provided at the most affordable price, preferably at no charge. Clear agreements are needed between NTPs and informal providers to ensure TB

Health Information Systems

Bringing informal providers onboard would be of little use unless the initiative contributes to production, analysis and dissemination of information on people's health, use of services and the impact of informal providers in health improvements. It is important to ensure that informal providers' involvement will contribute to better production and circulation of health information feeding into decision-making. This presupposes informal providers' capacity to handle records as well as collect the information and processes it.

Stewardship

Informal provider involvement in TB control, as well as in other public health interventions, requires sufficient governmental structures for regulation, coordination and quality control of all aspects of healthcare provision. The need for strong stewardship for informal providers is perhaps even more critical than for formal private providers. Informal providers do not belong to structured professional bodies providing self-regulation, sanctioning malpractice, and so forth, as compared to formal health professionals whose practice is always guided by their specific professional bodies. National guidelines should therefore clarify the process of engaging informal providers in a way that reinforces national health authorities' oversight. Weak stewardship will mean opening the way for widespread malpractice, resulting in risk to patient safety. Examples of issues that need consideration in the context of strong stewardship are summarized in the Box 1.

Empowering TB Patients and Communities

Approaches to strengthen the position of patients who use private providers' services include direct consumer information on procedures, information about prices and strong social marketing (Mills et al. 2002). It was from this perspective that the WHO developed guidelines on consumer information for safe and effective use of traditional medicine (WHO 2004).

Patients' associations can play critical roles in empowering their members. In recent years, associations bringing former TB patients together have increasingly been visible at the country and global levels. However, the impact of these associations is not yet sufficiently documented to advance achievement of the Stop TB Strategy. Within the TB/HIV collaborative framework, associations of people living with HIV/AIDS (PLWA) will be useful to TB patients, since many PLWAs eventually develop TB. More documentation of experiences in countries is needed in this respect, too.

Empowerment of TB patients is directly relevant to equity in access to TB care. Gender differences have been mentioned in relation to TB care seeking. For instance, women are more likely to use informal providers' services (traditional healers) than men are (Needham et al. 2001). Women also tend to experience longer health-seeking delays, both in Asia (Yamasaki-Nakagawa et al. 2001) and Africa (Mesfin et al. 2009). It has also been shown that resorting to informal providers might be a way of concealing one's disease because of stigma associated with it (Izugbara and Afangideh 2005). Proper engagement of informal providers may therefore improve equity of access to early diagnosis and treatment, and may mitigate TB-related social stigma.

Enable and Promote Research

Operational research is needed in many aspects of informal provider involvement, including its processes and its outcomes, measured by cases referred and detected, supervised and cured; costs implied; and other aspects of health systems strengthening. Also, continued efforts in basic biological research are needed in the fight against TB. Some plants used in traditional medicine in Mexico have been shown to have effect against MDR-TB (Camacho-Corona Mdel et al. 2008). A study from rural Tanzania reported on seven different plants used by THPs to treat AIDS-related opportunistic infections, including TB (Kisangau et al. 2007). In engaging informal providers, one should consider options of promoting investigations of these therapies whenever possible.

Conclusion

Engaging informal providers seems relevant to several aspects of the implementation of the WHO Stop TB Strategy. However, this involvement requires commitment and strong stewardship. Practical guidelines are needed to help NTPs initiate and manage such initiatives that might have enormous sector-wide impact, beyond TB control. Also, tools to help assess the implications of this involvement for health systems strengthening, for instance, are called for.

Disclaimer

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Privatization and Management Development in the Healthcare Sector of Georgia

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Abstract

Healthcare reforms in Georgia parallel some of the major changes made by other Central and Eastern European countries. This is especially true of efforts to privatize the health sector and secure capital investments from Western Europe. Privatization of Georgian healthcare requires an understanding of the Soviet-era healthcare system and ideological orientation. Many of the issues and problems of privatization in Georgia require new knowledge to enhance equity outcomes, improve financial performance, increase access to care and encourage healthcare competition. Training existing and future healthcare leaders in modern management theory and practice is paramount. A university-based health-management education partnership model was developed and implemented between several universities in the United States and Europe, along with two Georgian universities, to address workforce demands, changing market conditions, management knowledge and leadership competencies. Health-management education concentrations were developed and implemented along with several short courses to meet market demand for trained leaders and managers.

Background and Overview

Georgia, in the Trans-Caucasus region, has historically been a proud nation desired and influenced by the Greek, Roman, Persian, Byzantine, Turk, Mongol, Ottoman and Russian empires. Because of its geo-strategic location, Georgia has long been considered a bridge between Europe and Asia. Georgia is a country with approximately 4.6 million inhabitants. The country has an independent and progressive population; traditions and entrepreneurial spirit permeate society in general and support the reforms and characteristics of its healthcare system. The government has declared privatization of health facilities a priority, and, since 1994, several initiatives have been implemented as new services and systems find an efficient and effective way to operate in a rapidly changing economy.

Georgia has initiated healthcare privatization and governmental reforms in an effort to improve the health status of the population, ensure fairness in financing reforms and improve access to care. The United States Agency for International Development (USAID) and the American International Health Alliance (AIHA) have initiated health-management education partnership programs in Georgia to build collaboration and cooperation among universities in preparing future healthcare leaders. Key efforts embraced by the Ministry of Labour, Health and Social Affairs (MOHLSA) include appropriate improvements in physical infrastructure, capital investments that improve access to care and service quality, private sector involvement, development of private health insurance and strengthening the role of MOHLSA (National Institute of Health 2003).

The new reforms offer significant opportunities for improvement of health services in Georgia through the development of new capital infrastructure to replace outdated and inefficient medical facilities, an expansion of private sector investment in healthcare, improved quality and efficiency of healthcare services through market mechanisms and provider competition, and targeted public financing for the poor. However, many challenges have been identified and must be addressed early in the process of these reforms to avoid significant failures that could negate these opportunities, undermine the reform process and erode confidence in the government sponsoring the reforms. Some of these challenges are macro-economic and budgetary and relate to the fact that many citizens will not qualify as poor and therefore will not be covered by public sources. Also, Georgia's high number of unemployed workers and its self-employed working population will not have access to employer-subsidized voluntary health insurance plans.

The Soviet Period

Any serious attempt to understand the privatization of Georgian healthcare must begin with a consideration of Soviet-era healthcare. The stark contrasts between the authoritarian direction of health services under Soviet rule and modern day efforts at privatization highlight the extent of radical economic policy change within the country.

As one of 15 republics within the former Union of Soviet Socialist Republics (USSR), Georgia spent most of the twentieth century as an "essentially monocratic, highly centralized and ideological oriented" state (Verulava and Kalandadze 2001: 167). At a Soviet conference in June 1918, a resolution was passed calling for free medical care for the entire population of the USSR (Roemer 1991). The following month the Ministry of Health Protection was established. Three years later, Georgia became part of the Soviet Union.

For more than 70 years, centrally directed healthcare was the standard in Georgia and the other republics that made up the USSR. The physical facilities of the health delivery system were owned by the state, physicians and other healthcare professionals were employed by the government and the system of free care was financed by centrally collected tax revenues. Although centrally controlled by government, the quality of care often varied by region. Primary care was emphasized in the delivery system, with little emphasis on preventive care.

Like the other Soviet republics, Georgia placed a strong emphasis on physician training and education, maintaining educational ties to pre-eminent medical education facilities in Moscow where postgraduate training was provided for many of Georgia's medical and surgical specialists. The nation's tradition of physician training is evidenced by the fact that Georgia has one of the

world's lowest ratios of physicians to population (1:243) (The Economist 2007). However, the prolific production of physicians, coupled with severe funding problems, led to very poor physician compensation levels and lower socio-economic status for medical practitioners in Georgia, as well as in other Soviet republics. As a result, many physicians began to move away from the practice of medicine and seek other vocational activities such as teaching, administration and sales. In periods of relative prosperity during the Soviet period, the strong central direction from Soviet authority, as well as somewhat stabilized financing provided by centrally collected and disbursed tax revenues, allowed Georgia and other Soviet republics to maintain adequate healthcare economic sectors.

1991 and the Aftermath

When the USSR collapsed in 1991, Georgia and the other Soviet republics were cast into political and economic turmoil. With centralized tax revenues no longer available to support the Georgian healthcare sector, the healthcare system deteriorated rapidly. Per capita spending on healthcare dropped from approximately 13 US dollars in 1990 to 1 US dollar in 1994. During this period, immunization of children dropped significantly, infant mortality rates increased by 13%, maternal mortality increased significantly relative to other developed nations, and mortality due to cardiovascular diseases rose by 35% (Verulava and Kalandadze 2001).

Early attempts at dealing with the Soviet Union's collapse were mostly unsuccessful in the hospital industry. While public hospitals remained in place and Georgian-trained physicians and nurses remained in the newly independent economy, the loss of public support from Soviet-directed public funding left the system on the verge of ruin. The first serious effort at health sector privatization grew out of the "rose revolution" of 2003 when Mikheil Saakashvili, a US-educated lawyer, assumed the nation's presidency. With other Western-educated government advisors assuming prominent roles as economic policy makers, the push for large-scale economic privatization began in earnest. As early as 1994, a number of privatization methods had been introduced, including auction, tender, lease and direct sale of government-owned facilities in major capital-intensive industries (Asian Development Bank 2007). Telecommunications, energy and hospitals have been the major industries designated for the privatization efforts.

Privatization and the Healthcare Sector

The trend to privatization has been widespread in developing countries. This is especially true in Eastern European countries emerging from the Soviet socialist system. In theory, privatization should increase efficiency and productivity and improve financial markets, but there is also a risk that privatization can deplete national wealth and cause a decline in social welfare (Kikeri et al. 1992).

The debate about whether privatization is a positive move in health services policy has been discussed for more than two decades. In the 1980s and early 1990s, developing countries introduced considerable reforms to privatize and decentralize health services (Akins et al. 1987; Viveros-Long 1986). The analysis, which is still valid today, looked at privatization from several different perspectives. The three most important areas are provision of health services, financing of healthcare and regulation of all the healthcare sector components. Examples of public-private schemes and ideas are documented in the literature in the area of regulation and establishment of accreditation bodies for hospitals (World Health Organization [WHO] 1999); implementation of reforms with private, non-governmental entities taking a leading role and responsibility (Saltman and Figueras 1997) in the area of health financing, where private insurance schemes and even social and community-based health insurance models are utilized (WHO 1999); and in the area of health services delivery (National Institute of Health 2003). There are countless examples, embraced by industrialized nations like the United Kingdom, for the provision of services for the elderly and for child and reproductive health programs provided and financed by non-profit private organizations (Institute for Public Policy Research 2001; Walters et al. 2002; Uplekar et al. 2001).

Theoretically, privatization of healthcare services cannot be seriously considered until a national economy develops to a sufficient level of sophistication. Until then, the government must finance

delivery of health services and also provide those services directly to the population by owning clinics and hospitals and employing physicians and other providers directly. Since Georgia had been part of the former Soviet Union, it has inherited a Soviet-model health system, developed from an ideology that saw the delivery of healthcare as the responsibility of government.

When the Soviet Union collapsed and the former Soviet states became independent nations again, Georgians had to learn to live without the extensive support of the central government in Moscow. Most of these newly independent CEE nations saw their economies rapidly deteriorate to the point where they would be considered “developing.”

Privatization of several economic sectors, including healthcare, became an attractive concept to these newly independent nations. By privatizing healthcare finance and delivery, Georgia could benefit in two significant ways:

1. Privatized healthcare could be an important catalyst for expanding gross domestic product as the private sector invests in healthcare delivery, including the development of private health insurance capacity, as private market forces gain momentum to the economic benefit of the nation.
2. Increased private investment relieves the government of its economic burden of financing and delivering healthcare services. This frees up government budgets so that public funding can be devoted to other national economic needs that are less conducive to privatization, such as infrastructure improvements, public education and national defense.

In healthcare, expanded privatization also leads to the need for management development. Under publicly provided healthcare, physicians and other clinicians assume leadership and management roles, often by default. Private investment requires management skills rarely found in clinically trained individuals. Intensive management education efforts are needed to develop the individuals who will manage in the private sector.

The evolution of privatization in healthcare requires a management perspective that is difficult for many clinically trained professionals to appreciate, since their professional education did not address these skills. As competitive private markets develop over time, and organization of the health sector requires investment capital from domestic and international sources, healthcare managers require more specialized education in the management disciplines of human resources administration, organizational operations, marketing and financial management. Skills in these disciplines take on increasing importance for managers of clinical organizations like hospitals and clinics. They are also important for private health insurance companies, whether these are internationally focused firms expanding into Georgia who need Georgian nationals as in-country managers, or domestic insurance company start-ups. As Georgian governmental and educational leaders have come to realize, privatization requires management skills not found in centrally planned government-controlled economies.

As part of a project named 100 Hospitals, private companies, including real estate developers and pharmaceutical companies, are taking over public hospitals with no payment to the government, but with pledges that the new owners will upgrade the physical facilities and improve hospital quality (Lomsadze 2008). Physicians and nurses, severely undercompensated following the Soviet collapse and prior to privatization efforts, have seen their average salaries increase by 20% to 25% when employed by the newly privatized hospitals (Lomsadze 2008). The health ministry reports that hospital revenues have increased by 25% to 35% since the introduction of privatization (Lomsadze 2008).

Georgia has seen the effects of privatization in transferring the ownership and management of state-owned business to private firms. Public policies have been revised to enhance competition, and new regulations have been enacted to improve social services, especially in the healthcare sector. However, privatization has also contributed to unemployment of healthcare workers, and many healthcare system reforms have not improved the overall level of public health. The significant question facing Georgia is whether the social benefits of privatization can be realized during the next decade of governmental reforms. Many would contend that privatization has created an imbalance

between rich and poor. Privatization has usually been opposed in public sectors such as education and healthcare. Here again, the Soviet model provided universal coverage, and the new private markets have not developed significantly to provide access to primary care and increased quality of care for the majority of citizens. Out-of-pocket expenditures for healthcare have increased, and private insurance reforms have only recently been enacted and implemented (MOLHSA 2008). Healthcare coverage for the poor and vulnerable population remains a problem requiring public, government-supported programs.

Health Management Education Partnerships

The Ministry of Education and Science (MES) and MOLHSA in Georgia recognized that substantial educational efforts are required to achieve the ambitious healthcare reforms articulated by the Government of Georgia (GoG). Educational efforts require not only short-term courses, but also postgraduate (master's degree) programs that address core competencies of healthcare management and administration, hospital and clinic administration, healthcare planning, health economics, healthcare financing, health insurance, epidemiology and public health. While the accelerated development of a private sector as envisioned by the reform process will create an immediate demand for these specialties, the Georgian health education sector is not equipped to respond to this demand without considerable outside assistance. Furthermore, physicians with little or no management training currently occupy leadership positions in the healthcare sector. These senior medical directors (head doctors) have no formal training in organizational design, finance, marketing, ethics, health policy, organizational behaviour, operations management or human resources management. This lack of knowledge makes privatization difficult, and many reform efforts will not be sustainable without a trained workforce. Preparing future managers and leaders will take time, and new changes will not be easily embraced, adopted and implemented. Future MBA- and MHA-trained employees will fill mid-level management positions but not key leadership positions. Thus, the transition and impact of better-educated healthcare leaders may take another decade to realize sustainable outcomes. To accomplish the intense educational training, an international academic partner institution was formed to assist in development of the course content, curriculum, new courses and faculty.

With USAID support, the AIHA assisted the GoG's national healthcare reform efforts, with the goal of further strengthening Healthcare Management Education (HME) capacity in the country. The HME project utilized a partnership methodology to strengthen the capacity of leading existing MBA programs in Georgia by linking with a counterpart university in the US. The partners targeted the development of an international-quality health services specialization/concentration, building on the existing Master of Business Administration (MBA) curriculum. The US partner assisted the selected academic institution(s) in Georgia in developing faculty, curriculum, course content and materials for graduate master's programs with a health administration track; developing related short certificate courses and modules for practising healthcare managers and administrators; and developing case-based teaching models and practical internships to ensure maximum adaptation of training for practical experience. These targets were achieved through technical assistance, faculty exchanges, extensive training and promotion of international learning standards. In addition to developing and managing the "twinning" partnership, AIHA project staff worked closely with the MOLHSA and MES, as well as with private sector interests, governmental and regulatory bodies, and USAID and other international donor organizations to assure utilization, appropriate institutionalization and sustainability of the educational programs.

To ensure maximum impact and the sustainability of the project, special priority was given to the selection of Georgian partner institutions. Pre-existing capacity with respect to an established MBA program was a pre-requisite for selection of the Georgian partner institution. Based upon thorough assessment and consultations with potential partner institutions and the GoG, the AIHA identified and proposed institutions with pre-existing strengths and capacity and a strong interest in partnering with an American university in the development of a healthcare-management program.

The HME partnership chose the University of Scranton (UoS) as the lead partner, as well as

other select European universities and US universities such as the University of Central Florida and Saint Louis University, which have international teaching experience. An HME partnership model was used to build collaboration and cooperation between the UoS, the Caucasus University (CU) and the University of Georgia (UoG). Faculty from the Caucasus School of Business (CSB) and the UoG selected faculty to co-teach with UoS faculty in special healthcare-related courses during the 2007–2008 academic year. Two concentrations were developed: hospital administration and health insurance management. The initiative focused on building workforce capacity and sustainability in HME through course and curriculum development, faculty education, program development, co-teaching and student outcomes. The expanded partnership is continuing efforts to reinforce the critical mass and sustainability of health-management education and practice in Georgia.

Faculty from the CSB and UoG were trained and mentored to offer the healthcare concentrations in the MBA programs of study. Approximately 18 faculty members from Georgia were paired with faculty from the UoS to co-teach healthcare courses, with the expectation that the Georgia faculty would be able to teach the courses independently at CSB and UoG during the 2008–2009 academic year. Students for the courses were selected from CSB and UoG MBA students who were eligible to pursue an MBA healthcare concentration in Hospital Administration or Health Insurance Management. Approximately 40 current or recently graduated MBA students were selected equally from CSB and UoG. All students received healthcare concentration certificates in the 2007–2008 academic year (approximately 20 in each of the two areas of concentration). The AIHA, UoS, CSB and UoG worked with healthcare providers in Georgia to strategically place students in applied settings for fieldwork experience. Both concentrations included six courses (18 credits), and these were offered at the UoG and CSB as an MBA concentration at each university. Each concentration had six specific three-credit courses (18 credits) to provide the necessary knowledge, skills, abilities and competencies required for the concentration. A credit system model was discussed with Georgian partner institutions and adjusted as required to ensure that the program fit into the existing MBA programs at the CSB and UoG to meet the requirements of MES accreditation.

The MBA curriculum, including the new health-related concentrations, was designed for 60 credits and has the following structure:

MBA foundation courses	=	15 credits
MBA core courses	=	27 credits
MBA concentration (health)	=	18 credits
Total credits	=	60 credits

A. *Hospital Administration.* This 18-credit (six courses) concentration was designed to prepare hospital managers and executives to work in small, medium and large hospitals in Georgia. Students trained in this concentration are able to work in many different areas of hospital management and operations to provide healthcare services. Specific courses included:

- 1.1 Management of Health Care Services & Systems (three credits)
- 1.2 Principles of Managed Care (three credits)
- 1.3 Healthcare Organizational Leadership (three credits)
- 1.4 Managing the Modern Hospital (three credits)
- 1.5 Quality Assurance and Improvement (three credits)
- 1.6 Management of Human Resources (three credits)

B. *Health Insurance Management.* This 18-credit (six courses) concentration was developed to prepare students to work in the health insurance industry in Georgia. Participating MBA students combined core management courses with courses in insurance applications and risk management. These six courses were a separate concentration in the MBA curriculum. Three courses overlapped with the hospital management concentration. Students gained the knowledge, skills, abilities and competen-

cies for corporate and public sector risk management. MBA graduates work with insurance companies in benefits management, risk management or different types of consulting. Specific courses included:

- 2.1 Health Economics & Insurance (three credits)
- 2.2 Principals of Managed Care (three credits)
- 2.3 Healthcare Organizational Leadership (three credits)
- 2.4 Marketing Health Insurance Products & Services (three credits)
- 2.5 Quality Assurance & Improvement (three credits)
- 2.6 Financial Strategies & Risk Management (three credits)

Each course was taught over a 10-day period so as to provide 45 contact hours per three-credit course. UoS faculty taught the initial course. The UoS faculty member was assisted by selected Georgian faculty from the CSB and UoG. UoS faculty worked with their Georgian counterparts during the course to familiarize them with course materials and improve their pedagogical skills. After the course was completed, UoS faculty continued to mentor and work with their faculty counterparts via e-mail and video conference. Faculty development went hand in hand with curriculum development and involved developing new faculty members, improving faculty skills and expanding professional development opportunities. The partners worked on strengthening knowledge of content areas as well as pedagogical skills, using a training-of-trainers approach in workshops, team-teaching at the Georgian institutions and one-on-one instruction, follow-up and mentoring via e-mail and video conferencing.

Existing faculty from the CSB and UoG identified faculty who could teach courses in the hospital administration concentration and health insurance management concentration. Faculty had to be qualified to teach specific courses. If existing faculty were not qualified, new faculty were recruited to teach in each concentration. Each of the Georgian institutions (CSB and UoG) needed nine faculty (one for each course in each concentration – three courses overlapped).

A central element of the HME partnership was the assessment of current curricula and adaptation and development of curricula and related materials for graduate and continuing education, as well as undergraduate programs to meet the demands of the developing reform process. In addition to producing specific new curricula, the Georgian partners gained skills related to the process of overall curriculum development, including developing program structure, individual course syllabi, teaching materials and lesson plans. The curriculum helped to standardize goals and objectives for the educational institutions as well as ensure that specific reform needs were met.

An advisory group was developed to provide direct advice and feedback to university faculty and HME partners. This group was composed of hospital directors, banking executives, pharmaceutical executives, insurance company executives and USAID, AIHA and other governmental representatives. Several focus groups with healthcare providers from Tbilisi, Georgia, were consulted regarding internship and residency fieldwork opportunities. Input from outside stakeholders was used to modify the content of short courses and to add content to university courses. Fieldwork also served to build relationships between the public and private sectors. The demand for education and training for hospital and insurance company managers increased as individuals in key positions became aware of educational opportunities at both universities. Some of the curricula and materials were modified in a manner that allowed the material to be taught in non-degree short courses offered by the CSB and UoG.

An important component of the HME partnership agenda was the establishment of adequate library and learning resources to provide administrators, policy makers, students and the healthcare community with accurate and timely information on health policy and management. As part of the new partnership, the AIHA worked with the Georgian partner institutions, the international donor community and the private sector to ensure that adequate learning resources for faculty and students were made available to enable healthcare professionals to connect globally through the Internet, participate in continuing medical education and satellite-based video conferencing and education

programs with their UoS counterparts, continuously improve knowledge and skills through access to online journals, participate in e-learning courses and conduct distance learning classes with their UoS partners and other partner institutions around the world.

The HME partnership outcomes achieved in 12 months included:

- MBA concentration developed in Hospital Administration at the CSB and UoG
- MBA concentration developed in Health Insurance Management at the CSB and UoG
- Six courses with 18 credits for each concentration developed and implemented
- Related curricula, teaching and student materials developed and utilized
- Modified curricula, teaching and student materials for non-degree short courses developed
- Eighteen Georgian faculty trained in specialized courses through co-teaching and observation
- Program completion by 40 qualified MBA graduates (approximately 20 specialized in Hospital Administration and 20 in Health Insurance Management)
- Two new MBA concentrations at the CSB and UoG accredited by the Ministry of Education
- Four in-service education sessions conducted for faculty

Lessons Learned

Sustainable privatization requires continuous evaluation and assessment to design new approaches to meet new market conditions. Assessing changes in healthcare financing is key to understanding the direction and possible strategies that support effective policy development and health services implementation. Several criteria have been proposed by the WHO and include level of funding (amount, reliability and effect on other mechanisms); efficiency (technical, allocative, administrative and quality); equity (distribution of burdens and benefits); viability (consumer acceptability, acceptability to professional organizations and political acceptability); and health impact (change in health status) (WHO 1993).

Outcome assessments of HME training efforts suggest that formal academic preparation is needed in Georgia. Although short courses and continuing-education classes for head doctors are important, a trained workforce with competent healthcare leaders may take years to realize. This will jeopardize privatization efforts and make sustainable gains in quality of care, access to care and financial efficiency difficult. Furthermore, the private sector is not willing to provide free fieldwork training to university students. The concept of internships and administrative residencies is new in Georgia. Finally, finding faculty who are competent to teach specific courses is difficult. This is especially true in the areas of health policy, ethics, health law and medical economics.

Within all of these variables, developed and developing countries continue exploring formulas for public-private interaction. Business providers and insurers push for new service development and system designs beyond the traditional medical care boundaries, with more emphasis on public health, home care, prevention, retail medicine, lifestyle, nutrition and environmental health. This new universe of healthcare ventures requires strategies that enable

providers to move beyond the traditional competitive landscape of the healthcare marketplace.

The educational program partnership effort resulted in several important lessons learned. Some of the most salient include:

- Respect the culture in which you are working and its historical traditions. Georgia and other Eastern European nations have travelled a much different road in the past. Private enterprise is a concept to be learned and appreciated. Many citizens of the former Soviet republics remain nostalgic about the period of centrally planned economies. Faculty in these academic partnerships should read the history of the peoples and nations in which they are teaching in order to understand the uniqueness of the host country and its people.
- Be flexible in your approach to teaching. US or Western European faculty will find the teaching environment somewhat different from that of their own universities. For instance, the vast majority of MBA students at the Georgian universities are part-time enrollees attempting to balance their

educational, employment and family responsibilities. Classes were scheduled to begin at 2 pm and run until 9 pm each day including Saturdays and Sundays, meaning that students often came directly from work, even on weekends. On some occasions, they would arrive late and leave early because of the pressure of work commitments in a developing economy. It was not unusual for students to have to step out of the classroom to take cellphone calls from their offices.

- Try to develop close personal relationships with the administration and faculty of the host institutions. Diplomacy is crucial in academic partnerships like the one the authors encountered in Georgia. Fortunately, faculty from each of the three US universities had extensive international teaching experience and UoS faculty had worked with some of the Georgian administrators and faculty before embarking on the HME partnership. These close personal friendships enhanced the partnership effort.
- Appreciate the state of the macro-economy. The US was entering the great recession just as the HME partnership was beginning. As a physician–student remarked to a UoS faculty member, “When the US sneezes, many developing economies catch pneumonia.” It is inevitable that the measures of success, such as participation, outcomes and sustainability, will be correlated to the economic performance of the host country. It is within the nation’s macro-economic context that the educational endeavours will take place.

Future Efforts

The HME partnership has made significant contributions to Georgia’s modernization and privatization efforts. In one sense, the demand for healthcare leaders, administrators and managers is what economists refer to as a derived demand. It is derivative of the demand for modernization and privatization in the developing economies of Georgia and the other former republics of the Soviet Union. As their public policies favour privatization efforts, they simultaneously induce demand for initiation and expansion of health management privatization. The continued success of the health-management education efforts will depend on the successful push for privatization of the healthcare sectors of Georgian and other national economies.

While privatization efforts in the Georgian healthcare sector have gained momentum, the coming years will be challenging for entrepreneurs and government policy makers. Young professionals who are asked to make managerial commitments to the privatization efforts must see progress if they are not to become disillusioned and attempt to transfer their newly acquired management skills to some other sector that is perceived as more progressive, or leave Georgia for opportunities in Western Europe.

Some of the most obvious challenges to be addressed are:

1. *Greater perceived geopolitical stability in the South Caucasus Region.* The military hostilities that broke out between Georgia and Russia in August 2008 created a worldwide sense of political instability in the region. The tensions between the breakaway republics (South Ossetia and Abkhazia) and the rest of the nation permeate much of the political dialogue and contribute to the notion of instability. Even after the cessation of armed hostilities, the intensity of political opposition within the country seems particularly harsh when compared to other established democracies (Schildts 2008). Since foreign capital is more attracted to political and economic stability in countries in which it seeks to invest, the perceived lack of stability may hamper future inflows of foreign capital necessary for large-scale privatization.
2. *The synchronization of Georgian commercial law with private market evolution.* Many business laws have been intentionally simplified to avoid overwhelming the “as yet rudimentary nature of the market” (Guledani 2005). However, corporate, tax and securities law must mature to meet the reasonable expectations of domestic and foreign investors necessary for successful privatization development. As the private market evolves, so must Georgian business law.
3. *Private health insurance utilization and underwriting capacity expansion.* Private investment capital for health sector expansion, whether domestic or foreign, must see the possibilities for acceptable rates of return if it is to feel comfortable being employed in the privatization of the healthcare

sector. The unpredictability of revenue flows will cause investors to be wary of committing investment capital for hospital construction and other capital-intensive projects. As in the US, serious consideration should be given to making insurance coverage mandatory to facilitate revenue streams that can amortize investments. If Georgian insurers lack the capacity, foreign health insurers should be encouraged to write coverage in Georgia.

4. *The creation of lending facilities to spur privatization.* As a sovereign nation, Georgia should explore the expansion of its borrowing capacity from international financial institutions as a way of lowering the cost of capital for investors willing to commit to private health sector development. By using the faith in and credit of the government as borrower in the debt markets, Georgia might be able to provide lower-cost financing to domestic and foreign investors who would then find it more attractive to commit the borrowed capital to private investment projects.

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Treating Common Illnesses among Children under Five Years: A Portrayal of Health-Seeking Behaviours and Practices in the Northern Areas of Pakistan

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Abstract

Background: Inappropriate practices and behaviours while treating a child's illness impede correct medical consultation. We studied the health seeking behaviours of people engaging with healthcare systems for the treatment of under-five children.

Methodology: In the Ghizer District of the Northern Areas of Pakistan, a descriptive cross-sectional household survey was conducted in a random sample of 25 communities. Respondents were either a parent or caregiver of the child.

Results: Malaria, fever and diarrhea were found in almost one third of the children under five. One third of respondents did not know the cause of the child's illness. For seeking quality care, the majority visit private clinics, but home remedies, traditional practices and consultation with a faith healer were also common. Lack of knowledge about the child's illness and not making it a priority, lack of money and restricted women's social mobility are factors behind the delayed consultation (median delay: two to three days).

Conclusion: Health education and health promotion programs must address the knowledge gaps about children's illnesses and advocate appropriate health-seeking behaviours. Issues around quality of care in government centres and affordability in the private health sector must be addressed in order to improve health service utilization.

Introduction

To understand how people use healthcare systems, it is extremely useful to study the health-seeking behaviours of individuals, especially in relation to their socio-cultural, economic and demographic circumstances. Factors determining these behaviours may be seen in various contexts: physical, socio-economic, cultural and at times political (Kroeger 1983; Shaikh and Hatcher 2005). Therefore, utilization of healthcare systems, public and private, formal and informal, is strongly influenced by these factors. Researchers have grouped them as socio-demographic factors, cultural beliefs and practices, gender discrimination, economic and political systems, dynamics of communities, environmental conditions, the disease pattern and the healthcare system itself (Andersen 1995; MacKian 2001).

Socio-demographic factors include family size and parity, mother's education and sources of livelihood of the family (Goldman and Heuvline 2000; Thorson et al. 2000; Yip et al. 1998). In both the preventive and curative aspects of healthcare, a mother's behaviour in seeking health services is an important factor that influences child survival by affecting the child's health and nutritional status as well the mother's own health. Some inappropriate practices and behaviours result in delay of appropriate medical consultation and treatment seeking and are more commonly observed among women for their own health problems and for children's illnesses (de Zoysa et al. 1984; McNee et al. 1995; Perez-Cuevas et al. 1996; Stuyft et al. 1996). Delay in child healthcare seeking has been attributed to the cultural barriers that deter mothers from taking their children to a formal health facility. As a result, mothers experiment with folk remedies at home, trying drugs purchased from a non-qualified private health provider, or delay the consultation because of other priorities at home (Hoa et al. 2007; Källander et al. 2008; Malik et al. 2006).

Economic and financial accessibility factors include the varying levels of earning a living, which result in greater health inequalities. Higher out-of-pocket expenditures on health reflect the consultation fee and the fare spent to reach the healthcare facility, a burden to families with few financial resources. Also, financial constraints compel individuals or households to resort to home remedies and self-medication (Granich et al. 1999; Sreeramareddy et al. 2006). As for *physical accessibility factors*, the effect of distance and travel time to healthcare facilities is an important barrier, and becomes amplified when combined with lack of transportation and poor roads (D'Souza 2003). *Health service factors* include the features of the healthcare facility and confidence in the service provider, both of which facilitate the choice of health facility. The private sector in developing countries flourishes because it focuses mainly on quality and range of services (Berman and Rose 1996). Moreover, easy access, shorter wait times, longer or more flexible opening hours, greater availability of staff and drugs, and an empathetic attitude in the health provider attract more clients to private healthcare (Aljunid and Zwi 1996; Bhattia and Cleland 2001).

Health-seeking behaviours evolve over time, so it is imperative to understand how people employ healthcare systems in their respective socio-cultural, economic and demographic circumstances. All these behaviours actually define social position of health and provide a better understanding of the disease process. The study of health-seeking behaviours, therefore, underpins the design of health promotion campaigns, strategies, interventions and programs, and is strongly advocated for effective policy making in priority areas, eventually ensuring appropriate health services utilization.

Study Aim and Objectives

The aim of this research was to investigate determinants of health-seeking behaviour and health service utilization for under-five children in the Ghizer district of the Northern Areas of Pakistan and to provide evidence to the local health department for prioritizing programs, designing appropriate interventions and rethinking the role of the public sector in healthcare provision.

Specific objectives included:

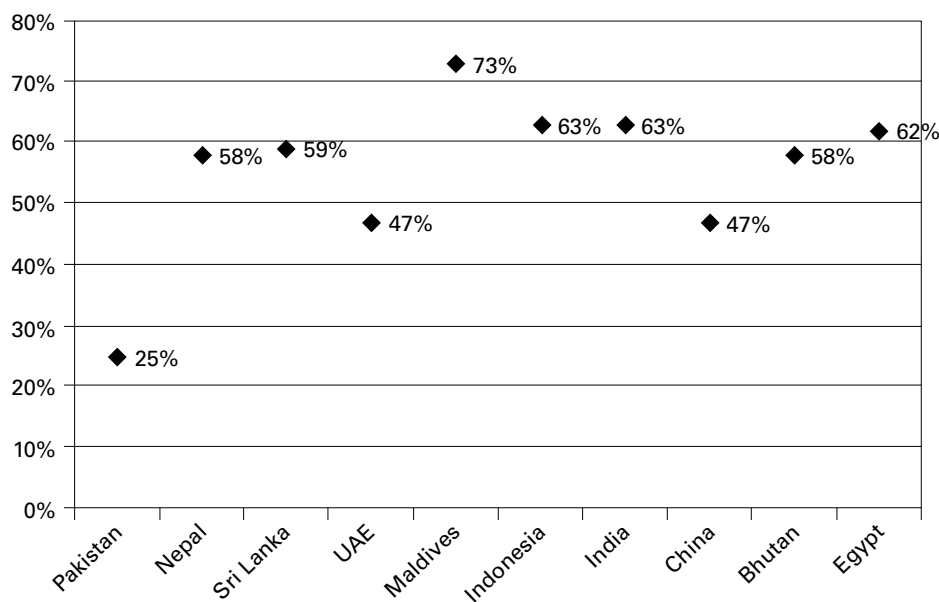
1. Determining the pattern of utilization of healthcare services for the most common health problems in under-five children
2. Investigating major factors responsible for shaping health-seeking behaviour, and thus health service utilization, for under five-children

3. Making policy recommendations to the local health department to develop and design future strategies and programs based on the evidence

State of the Health of Under-Five Children and the Healthcare System in Pakistan

The World Health Organization (WHO) (2006) has reported that infant, child and maternal mortality in Pakistan is one of the highest in South Asia and in the developing world. This picture reflects the low priority the Government of Pakistan has given to development of the social sector and in particular the low investment in the health sector, below that even of neighbouring countries in South Asia, according to the World Bank (1999). In a country where 74% of the people live below the poverty line (less than 2 US dollars a day) and where out-of-pocket expenditure for health is nearly 80%, health spending has been less than 1% of the central government's total expenditure for over a decade (World Bank 2006). While the health status of the population in general has improved over the past three decades, under-five mortality remains unacceptably high (93/1000 live births) for both male and female children in Pakistan and has been declining at a very slow pace compared to many other countries in the region (United Nations Children's Fund 2008b).

Figure 1. Trends of decline in child mortality since 1990 in Pakistan and neighbouring countries.



Source: United Nations Children's Fund UNICEF 2008b.

The healthcare system in Pakistan comprises public as well as private health facilities. An elaborate network of dispensaries, basic health units and rural health centres is in place. However, these basic-level facilities have restricted hours of operation and are often located far away from the population. No more than 20% of people consult a government first-level care facility, and this picture has been unchanged for the last 10 years (National Institute of Population Studies and Macro International 2008; Pakistan Medical Research Council 1998). In the private sector, besides the accredited outlets and hospitals, there is mushrooming growth of general medical practitioners, homeopaths, traditional/spiritual healers, Greco-Arab healers, herbalists, bonesetters and quacks. Nevertheless, the entire health sector with all its ventures and initiatives has not been able to bring about any significant outcomes, especially among rural population groups.

Study Setting

Our study area, Ghizer district, in the Northern Areas (NAs) of Pakistan, is pre-dominantly a rural area of people with multiple ethnicities and languages. It is located approximately 40 km northwest of Gilgit (630 km from Islamabad), the capital of the NAs, and has an average altitude of 1,500 m. Over the last few decades, non-governmental and government interventions have achieved a marked increase in health facilities; however, the remoteness of areas and difficult terrain force local people to rely on traditional healers. Awareness about health is still very low, and hygiene is difficult to practise in remote communities. The only expenditure that poor people incur on health is on pharmaceuticals or secondary healthcare. Although government health facilities are free, there is a lack of drugs and services are poor. A major constraint to women clients is the shortage of trained female health staff. However, women health workers and health visitors have recently started making a difference. Public sector health infrastructure consists mainly of primary and secondary care facilities, while specialized care is provided by the private sector, predominantly the Aga Khan Health Services Pakistan (AKHSP).

The average number of household members in Ghizer district is nine, and the average annual household income ranges between 800 and 2000 US dollars (International Union for Conservation of Nature 2003). Fertility has declined rapidly since the period 1992–1996, reaching 4.1 children per woman in 2004–2006 (Hakim et al. 1998), yet the demographic pyramid of the NAs is broad based, indicating that the region's population will continue to grow at a high rate for a considerable time, even if fertility declines further. According to the Government of Pakistan (2000) census report, under-five children constitute 10% to 15% of the total population. Government outreach services for far-flung communities are not much visible on ground. Annual population growth rate in the NAs is 3%, much higher than the national growth rate of 1.9% (Government of Pakistan 2007). This relatively high rate is due to high levels of fertility combined with relatively high – but decreasing – mortality, especially in children under five. Water is scarce in summers and more so in harsh winters, and general hygiene is poor. Consequently, hand-to-mouth behaviours of children and proximity of animals and their feces promote gastrointestinal and respiratory infections and worm infestation. Abbas and Schlosser (2004) have documented that inadequate sanitation and polluted water affect under-five children most, producing a death toll of 109 per 1,000 live births. The same study maintained that although non-government and government interventions have achieved a marked increase in health facilities, remoteness of areas and difficult terrain still cause local women to rely upon traditional practices for treating even common illnesses.

In Ghizer District, the AKHSP operates 13 maternal and child health clinics, three family health centres and two medical centres. Although a welfare system is also in place for those who cannot afford medical services, generally, clients are charged a nominal fee. The government operates six basic health units, 11 dispensaries, six maternal and child health clinics and 21 first aid posts, and does not charge for services (International Union for Conservation of Nature and Natural Resources 2003). There are quite a few private practitioners and pharmacists, along with scores of traditional healers and faith healers representing the informal sector.

Study Methods

Study design

A descriptive cross-sectional household survey was designed to capture the most important determinants of health-seeking behaviours and health service utilization. The household survey helped us gather information on health-seeking behaviours of even those who had never consulted a formal or qualified healthcare provider for their child's illness.

Sample Population

Ghizer district comprises four administrative sub-districts representing four different valleys with pockets of sub-populations: Puniyal, Ishkomen, Yasin and Gupis. Puniyal is semi-urban, whereas the other three sub-districts are entirely rural. Drawing from the last national census report of 1998 and population data of the district under study, a computer-generated random sample of 25 communi-

ties/clusters was chosen, stratified by the four sub-districts, and in Puniyal sub-district further stratified by urban/rural status. In each of the 25 communities, household interviews were conducted, starting from the centre of the cluster, using the “right hand rule.”¹ A child with a history of illness during the previous month was included in the study, and the parent or caregiver was interviewed in each household; however, where more than one child was found to have had a history of illness, the “pick from a hat”² method was used. Subsequently, a total of 539 interviews could be conducted for capturing data on healthcare-seeking and health service utilization for under-five children (female: 258 and male: 281), representing the entire district.

Data Collection

We used a structured questionnaire with close-ended questions, adapted from validated instruments (Ahmed 2005; Kroeger 1983) previously used in other settings and modified in the light of insights gathered from our qualitative study preceding this survey. We collected information on demography, cultural beliefs and perceptions about etiology of the illness, economic factors and financial accessibility, physical accessibility including time to reach the provider and availability and cost of transport, women’s autonomy-related issues, health service-related factors including gender of the provider, and information on care received. We investigated patterns for each type of healthcare provider, using case-case methodology to help understand why clients chose a particular type of provider. The questionnaire was translated into Urdu for use in local settings by locally hired data collectors. For pre-testing, the field site was a village outside but close to the study district. A briefing was held with team members, who gave useful feedback on the study instruments, methodology and approach. In all, the team conducted 29 household interviews and 21 exit interviews, under the supervision of the principal investigator. Instruments were then revised for wording, phrase structure, sequence of questions, time spent in the interview and cultural appropriateness. In the final survey, although most interviews were conducted in local languages, responses were translated into Urdu and checked by the study coordinator in the field. The respondent in all the interviews was either a parent or the accompanying caregiver of the child. Exclusion criteria were refusal to give consent and inability to answer due to the severity of the child’s illness. Interviews took place either outside a healthcare facility or inside the household, depending on the convenience and preference of the respondent.

Ethical Approval and Considerations

The research protocol received formal approval from the Aga Khan University Ethics Review Committee and Ethical Review Committee of the Liverpool School of Tropical Medicine UK, which abide by all international ethics standards. Formal permission as well as collaboration was sought from the Northern Areas local government, and the health department in particular was briefed about the study aims and objectives. Prior to data collection, village elders and community representatives were given an orientation to the study. An informed consent form was given to the accompanying adult, and they signed it before the interview. Confidentiality and anonymity was assured to the maximum level.

Data Analysis

Descriptive analyses of the household survey provided the profile of the child’s illnesses during the previous month, whether treated or not, and patterns of care. Analyses also furnished information on the perceptions of quality of care and many other factors associated with health-seeking behaviour and health service utilization. Since multiple responses were allowed for each of the questions, no *p*-values or odds could be computed.

Results

Results are presented without gender segregation, as no marked differences were found for male and female children. A large proportion of the population (86%) represented low socio-economic status, ascertained based on the head of the household’s monthly income, number and variety of household items including type of house, and other assets or holdings used or owned by the family.

Table 1. Results

Variables	N = 539
1. Gender of the child	
Male	52%
Female	48%
2. Socio-economic status of the family	
Upper	4%
Middle	11%
Lower	85%
3. Child's illness reported	
Malaria/high grade fever	38%
Diarrhoea	37%
Vomiting/abdominal pain/ other gastric problems	15%
Cough/common cold	10%
Pneumonia	9%
Skin diseases	6%
4. Causes perceived for child's illness	
Don't know	34%
Weather	19%
Food related	18%
Unhygienic conditions	17%
5. Health provider consulted for the first consultation	
AKHSP (MBBS or paramedic)	41%
Government (MBBS or paramedic)	29%
Private (MBBS or paramedic or pharmacist)	11%
Faith healer	8%
Home remedy	7%
Self medication	7%
Informal (quack, <i>tabib</i> , herbalist)	3%
6. Reasons for delay in consultation with a trained health provider	
Less priority to health	48%
Busy at home	16%
Self-medication	12%
Economic reasons	12%

Table 1. Continued

Distance	9%
Nobody at home	7%
Faith healer/shrines	5%
7. Reasons quoted for consulting a specific health provider	
Satisfaction with the quality of care	55%
Proximity/convenient access	25%
Fee/cost/affordability	17%
Severity of illness	16%
Medicines received	11%

Note. From 3–7, percentages may not add to 100 because multiple answers were allowed.

AKHSP = Aga Khan Health Services Pakistan; MBBS = Bachelors of Medicine and Bachelors of Surgery.

The most common illnesses or symptoms reported in the study included high-grade fever (most of the time attributed as “malaria”), diarrhea, gastrointestinal symptoms like vomiting or abdominal pain, upper respiratory tract infections and respiratory infections. Other problems reported (9%) included asthma, eye and ear infections, headaches, dental problems, psychiatric illness, kidney problems, worms and minor injuries.

Extremely cold weather conditions in the study area, food-related symptoms and unhygienic living conditions within and outside the household were perceived by the parents/caregivers as the probable causes of illness in under-five children. Nearly one third of respondents did not know or could not comment on the cause of their child’s illness (Table 1).

Respondents had consulted the AKHSP healthcare facility more often than the government centre or any other healthcare facility in the vicinity. Private medical doctors, pharmacists or any other paramedics were other providers frequently consulted, besides the AKHSP and government centres (Table 1).

Based on study participant responses, a median delay of three days before resorting to a formal medical consultation was computed, yet the delay could be as long as seven days. This period could be critical in responding to a child’s illness, whatever the reasons for the delay. While exploring the reasons, almost half of the respondents mentioned that they just did not give priority to a child’s illness, or they were too busy to take the child to a doctor, or they had been trying their own stock of medicines at home. Economic reasons and physical distance to a clinic were other concerns (Table 1).

Satisfaction with the quality of care received at any health facility was reported as the topmost reason for consulting any specific healthcare provider. Given the difficult physical terrain of district Ghizer, proximity and convenient access was the next main reason for preferring a certain provider. Affordability of the health provider’s fee was another concern in deciding about the consultation for a child’s illness. Nonetheless, severity of the child’s illness was also a determining factor for a consultation with a specific health provider (Table 1). Other reasons (6%) included type of illness, gender of the health provider, range of services available, community opinion and family pressure.

Since household economics and the affordability factor had been reported as prime for deciding about treating a child’s illness, we enquired about the expenditure on average for one consultation, including fare and other expenses incurred on a trip to a nearby clinic. Results show that in most of the cases, the amount spent was around Rs50 (approximately 0.6 US dollars; inter-quartile range: Rs0-200 i.e 0-2.3 US dollars) for one round trip. Even this meagre amount of Rs50 is a burden on a poor family’s livelihood. Respondents shared that for severe and complicated illness episodes, they had sometimes spent up to Rs500.

Discussion

All over the world, and including Pakistan, pneumonia, diarrhea and malaria still remain the major killers of children under five (Black et al. 2003). We found the same set of illnesses or symptoms in our study. Poverty compounds the situation further, especially in timely and appropriate healthcare-seeking decisions and service utilization. As in many other developing countries where women's exposure to information is limited, the lack of knowledge on health issues and on child health becomes a serious barrier to a mother seeking healthcare for her children, even in matters of utmost importance such as immunization or a medical emergency. From the study findings, it is evident that at least one third of parents and caregivers were not aware of the exact cause of illness. We can perhaps assume that whether the government health system or the community-based AKHSP program is involved, the health promotion component of healthcare is weak. This is reflected in the community's existing knowledge, behaviours and practices pertaining to illnesses of under-five children. In such settings, cultural myths and illiteracy are the major barriers to health promotion interventions (Zaidi et al. 2004).

Supported by more general data at the national level, we found in our study that people prefer going to private health facilities, particularly the AKHSP, for children's illnesses. The main reasons are the quality of care and empathetic attitude of the healthcare provider that people anticipate in the private sector; this finding concurs with many other studies. Local *khalifas* (faith healers) are often consulted because they are well versed with the local customs and they offer very compassionate and considerate services, at times even free of charge. Physical distance to the nearest health facility, the availability of public transport and the cost of a round trip are other genuine concerns (Shaikh and Hatcher 2005). Our study found that the utilization of various health services has been markedly influenced by the proximity and availability of the health providers. Many people would consult a *khalifa* because of his presence in every single village and round-the-clock availability. However, for children's diseases, people generally prefer the AKHSP centre. Our study found use of home remedies or previously used medicines for treating children's illnesses at home a particularly common practice. These practices delay the formal medical consultation for even simple symptoms like cough, diarrhea and fever, and the family ends up spending a considerable amount of money for treating a child's illness. Awareness about health and hygiene is still low in remote communities.

Under-five morbidity and mortality could potentially be avoided by putting in place simple interventions that can be integrated and scaled up within community and outreach programs (Bhutta et al. 2008). However, all these programs and interventions must be tuned to socio-demographic characteristics of the area (WHO 2005). This would necessitate a meaningful strengthening of public health programs and social mobilization, as well as concerted action even beyond the health sector (Shaikh 2008a). Health education and health promotion programs must address the knowledge gaps about children's illnesses and advocate the appropriate health-seeking behaviours. Health education by a mass campaign as well as at the district community level is needed, now. Hence, researchers must give enough credence to local social determinants, especially the level of female literacy in the Northern Areas. Although our study captures the issues in one only district, the socio-economic, demographic and geographic strata indicate that the state of affairs would be similar across the northern region of Pakistan. Yet we are not generalizing our findings for the entire country.

Conclusion

Addressing the issue of child morbidity and the target set in the Millennium Development Goals for reducing child mortality to 43/1000 live births would necessitate an acceptable coverage and continuum of primary care (United Nations Children's Fund 2008a). On the supply side, issues around quality of care in government centres and affordability in the private health sector must be addressed in order to improve utilization of health services. Recommended protocols and childhood illness treatment strategies must be integrated at first-level healthcare facilities for delivering quality services, because that has been the prime reason for the community to use any particular health facility. However, physical access would be an issue because of difficult terrain in the entire area.

Therefore, a more practical approach would be to introduce an outreach health services program with curative and preventive care by skilled community health workers who could reach out to remote villages in the valley of Ghizer district. On the demand side, it is imperative to formulate a behaviour change strategy and a comprehensive advocacy campaign for promoting appropriate practices for reproductive health, infant and child feeding, immunization, home health and healthcare seeking.

In Pakistan, we have case studies where engaging the private sector actually became instrumental in making the healthcare system more responsive (Loevinsohn et al. 2009). Shaikh et al. (2008) argued that a meaningful and well thought out partnership between the government health department's programs and AKHSP interventions can play a large role in improving women's health as well as child health in difficult and remote areas within the district. This research would certainly be substantiated with more in-depth studies across the Northern Areas of Pakistan, informing health services managers and policy makers about health-seeking behaviours and patterns of health services utilization of the people of the area, especially for treating their children. More challenging would be translating such research and understanding into health education, health promotion and policy formulation (Shaikh 2008b). This is undoubtedly an opportunity for action on social determinants of health-seeking behaviours. Bringing together views from all possible corners and all reliable sources will surely deliver appropriate strategies and approaches to find solutions for improving health conditions of under-five children in the Northern Areas of Pakistan.

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Endnotes

¹ The "right hand rule" is the WHO's recommended method for ascertaining the starting point for community surveys. Villagers help determine the centre of the cluster or village. Then, a pencil is spun on the ground. When the pencil stops, the direction in which it is pointed is taken as the starting point, and first household on the "right hand" is chosen for the first interview. The adjacent household on the right is skipped, and the next one is included, and so on.

² "Pick from a hat" is a lottery method. All the names of eligible study participants (in this case all under-five children who were ill in the last one month) are written on small piece of papers and put in a hat or a basket. Randomly and blindly, one is taken out, and that person is included for study. If the individual is not available or willing, the next one is included.

Religion, Condom Use Acceptability and Use within Marriage among Rural Women in Malawi

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Abstract

Introduction: Correct and consistent condom use within an HIV-discordant partnership could prevent sexual transmission of human immunodeficiency virus (HIV).

Methods: Data on ever-married women from rural Malawi were obtained from the Malawi Diffusion and Ideational Change Project (MDICP) of 2006. We assessed the strength of association between religion and acceptability of condom use within marriage in general and also when one of the partners is suspected or known to be HIV infected.

Results: A total of 1,664 ever-married women participated in the MDICP 2006. Of these, 66.7% believed condom use was acceptable within marriage when one partner suspects or knows that the other was HIV infected; 38.2% believed condoms were acceptable within marriage generally. Only 13.8% reported ever having used condoms within the current or most recent marriage. Multivariate analysis found no difference in acceptability of condoms within marriage between Christians and Muslims, or between Catholics and all but one of the individual denominations assessed.

Conclusion: Christian women in rural Malawi were no more or no less likely to accept condom use than Muslim women; there was also no difference in attitude toward condom use within marriage among Malawian women.

Introduction

Consistent and correct condom use may be associated with an 80% reduction in human immunodeficiency virus (HIV) risk (Weller and Davis 2001, 2002). Despite sexual transmission of HIV being common within marriage, condom use in long-term relationships is low (Dunkle et al. 2006; Higgins and Sun 2007; Montgomery et al. 2008; Moyo et al. 2008; Oddens et al. 1994; Versteeg and Murray 2008).

Marriage is an independent risk factor for the acquisition of HIV via unprotected sexual intercourse in a serodiscordant relationship (USISP) in many parts of sub-Saharan Africa (SSA), where the HIV epidemic is generalized (Glynn et al. 2001; 2003, Smith 2007). Mermin et al. 2008 reported that among married study participants in Uganda with recent HIV infection, 38% of the incident infections occurred among people whose spouses had long-standing infection, 14% in spouses with recent infection and just under half (49%) in spouses who were not HIV infected. Dunkle et al. (2008) have estimated that from 55.1% to 92.7% of new heterosexually acquired HIV infections among adults in urban Zambia and Rwanda occurred within serodiscordant marital or cohabitating relationships. Furthermore, these authors also suggested that interventions for couples, which reduced transmission from 20% to 7% every year, could avert 35.7% to 60.3% of HIV infections in these settings.

Religion can influence attitudes toward condom use within and outside marriage. By contributing to an individual's concept of identity or by normalizing certain values and beliefs (Gilbert 2008), religion can affect an individual's preferences toward condom use. Religion can influence the perception that condoms are unnatural and therefore not acceptable within marriage (Crosby et al. 2008; Ngalande et al. 2006; Richters et al. 2003). The adverse attitudes toward condom use among unmarried young people in some religions may spill over and generate similar attitudes toward condom promotion within couples (Kalipeni and Ghosh 2007). Pfeiffer (2004) has reported that Pentecostal and African Independent Churches (AIC) in Mozambique have openly discouraged condom use among church members.

To improve our understanding of the acceptability of condom use within marriage, we assessed whether condom use acceptability differed by religion in ever-married women in rural Malawi. Investigating condom use within marriage generally, and when there is a perceived risk of HIV infection, offers useful and different insights compared to assessing condom acceptability within marriage under all circumstances (even when there is no concern of HIV infection).

Method

Sampling Strategy and Study Setting

We used data from the Malawi Diffusion and Ideational Change Project (MDICP) conducted in 2006 in three rural districts of Malawi: Rumphi in the north, Mchinji in the centre and Balaka in the south. The MDICP is a collaborative research project of the University of Pennsylvania and the University of Malawi. Comprehensive descriptions on the design, rationale and conduct of data collection over previous rounds of the MDICP have been described elsewhere (Poulin 2007; Watkins et al. 2003). The data collection attributes remained largely unchanged in the 2006 sample. The survey was conducted with the aim of collecting data on, among other topics, sexual behaviours, religion,

self-perceived risk of HIV acquisition and HIV serostatus among individuals aged 15 years or above.

Rumphu district has a patrilineal kinship, lineage system and virilocal residence pattern (a married woman lives in her husband's village). The Tumbuka tribe, the inhabitants of Rumphu district are predominantly Presbyterian Protestant. In Balaka (south), the Yao, the predominant tribe in the district, are primarily Muslim, follow a matrilineal system of kinship and an uxorilocal residence pattern (a married man leaves his village and stays in his wife's village). There is also a sizeable population of Catholics in the district.

Mchinji district, in the centre of the country, follows a less rigid matrilineal system whereby inheritance may be matrilineal or patrilineal and residence virilocal or uxorilocal, depending on the fulfillment of certain marital cultural requirements. Mchinji is inhabited by the Ngoni, Chewas and Senga; all these tribal groups are largely Christian. The distribution of religions in the study districts follows the introduction of Islam by the Arabs in the 1400s and Christianity by the British and South African mission Protestants in the 1800s (Bone 1982; Foster 1997; Foster and Banda 1999).

In each district, a cluster sampling strategy was used and a total of 145 villages eventually selected. A week prior to fieldwork, the research team compiled household lists of individuals normally resident in those villages. A sample of eligible married women was then randomly selected from the household list. About 500 households were selected in each of the districts, and women aged 15 years or older were recruited from the selected households. In Mchinji and Rumphu districts, the sampling was designed to cover Census Enumeration Areas (CEAs) included in the 1988 Traditional Methods of Child Spacing in Malawi (TMCSM) survey (Kalipeni and Zulu 1993; Krugmann-Randolf 1989; Srivastava and M'manga 1991). Balaka was selected for its rural location and its Yao and Muslim majority.

Since villages varied in size, sampling fractions used were inversely proportional to village populations, such that smaller villages were oversampled. Trained research assistants administered the survey questionnaires in Chichewa language in Mchinji, and in Yao and Chichewa in Balaka and Tumbuka for Rumphu district. Each survey participant was interviewed in private. As far as was practical, female research assistants interviewed women participants. HIV testing was done from saliva samples using OraQuick™ (OraSure Technologies, Bethlehem, PA, USA). HIV test results were made available to study participants who consented to get them.

Data Analysis

Outcome variables were condom use acceptability within marriage in general and acceptability within marriage when one of the partners was known or suspected to be HIV infected. The outcomes were created from the responses to the question "Do you think it is acceptable to use a condom with a spouse to protect against HIV/AIDS?" The second question was "How about when one spouse suspects or knows that the other might have HIV/AIDS: is it acceptable to use a condom in that situation?" The exposure variable was religious faith or denomination (Christian, Muslim, Catholic, Presbyterian, Church of Christ, African Independent Churches [AIC], and "other Protestants" – a combination of smaller protestant churches).

We calculated frequencies, proportions, means and medians of socio-demographic and behavioural characteristics in order to describe the sample. To assess whether a variable met the criteria for a confounder, we estimated its bivariate association with the exposure and the outcome. A two-sided cut-off α -level of .05 was used.

We conducted multivariate logistic regression analysis to estimate the effect of religion (Christian versus Muslim) on the acceptability of condom use within marriage, independent of confounders. The initial model had the outcome, exposure and all covariates (tribe; district of residence; whether the married woman lived in her village, her spouse's village or a neutral place – neither her village nor her husband's village; educational level current marital status; and age). These covariates have previously been reported to be associated with condom use or with religion (Kienne et al. 2009; Kongnyuy and Wiysonge 2007; Rankin 2008; Washington et al. 2009) but not considered to be on the causal pathway. We arrived at the most parsimonious model through stepwise backward logistic

regression. Potential confounders were retained in the model if, following their removal, the effect estimate changed by at least 5%. Data were analyzed using Stata software, Version 10 (Statacorp, College Station, TX, USA).

We conducted power calculations using nQuery software (Statistical Solutions Limited, Saugus, MA, USA) to assess if the study had adequate power to show a difference. With a two-tailed α of .05, the power to detect a statistically significant difference in condom acceptability between Christians and Muslims was 84%. The results reported are for complete case analysis.

The MDICP research protocol was reviewed and institutional review board (IRB) approval granted by the University of Pennsylvania and University of Malawi, College of Medicine Research and Ethics Committee (COMREC). For the purposes of our study, however, de-identified data were obtained from the University of Pennsylvania Population Research Center. The protocol for our secondary analysis received IRB exemption from the Public Health and Nursing IRB of the University of North Carolina at Chapel Hill, USA.

Results

A total of 1,664 ever-married women participated in the MDICP 2006; their median age was 34 years (interquartile range 25–43 years). The study districts had nearly equal representation in the total sample: 526 (31.6%) in Mchinji, 569 (34.2%) in Balaka, 530 (31.9%) in Rumphi and 39 (2.3%) were uncategorized by district. Most of the women, (1,467, or 88.2%) were currently married, the remainder divorced, separated or widowed. The sample distribution by individual religions was 281 Catholics (17.0%); 278 (16.9%) Presbyterians, 400 (24.3) Muslims, 291 (17.6%) belonging to the AIC and 88 (5.4%) from other Christian churches.

The majority (57.1%) of women in Balaka reported having no formal education, compared to a third (33.0%) in Mchinji and 3.3% in Rumphi. Christians were slightly younger (mean age 34.8 years, 95% confidence interval [CI] 34.1–35.4) than Muslims (mean age 37.4 years, 95% CI 35.4–39.5; $P < .01$).

Prevalence of HIV Infection and Sexual Behaviours

Overall HIV prevalence in the sample was 6.8% (95% CI 5.5–8.2). Prevalence of HIV infection by socio-demographic characteristics was as follows: currently married, 5.2% (95% CI 3.9–6.5); separated or divorced, 17.6% (95% CI 10.1–25.2); and widowed, 22.2% (95% CI 10.8–33.7). Although HIV prevalence was lower among Christians, 6.5% (95% CI 5.1–7.9), than Muslims, 9.4% (95% CI 4.2–14.5), the difference was not statistically significant ($P = .22$).

Compared to Muslims, a slightly lower proportion of Christians had no data on HIV status (6.9% versus 7.7%), but the difference was not statistically significant ($P = .70$). The prevalence of a history of extramarital sex was the same for Christians, 2.6% (95% CI 0.1–5.1), and Muslims, 2.6% (95% CI 1.8–3.5; $P = .96$). Further description of the sample is shown in Table 1.

Acceptability of Condom Use within Marriage

Slightly more than half of the women (55.9%) responded to the question of whether they had ever used a condom in the current or most recent marital relationship. Of these women, 128 (13.8%, 95% CI 11.5–16.0) reported that they had used condoms within the current or most recent marriage. There was no difference in proportions among Christians, 14.7% (95% CI 12.1–17.2), and Muslims, 10.1% (95% CI, 6.7–13.7; $P = .16$). Proportions of women who reported ever using condoms in the current or most recent marriage in individual religious denominations are shown in Table 2.

Overall, the majority, 66.7% (95% CI 63.7–69.5), believed it was acceptable to use condoms within marriage when one spouse suspected or knew that the other was HIV infected. However, a smaller proportion, 38.2% (95% CI 35.9–40.5) reported that condoms were acceptable in marriage in general. Proportions of women who believed condom use was acceptable within marriage and reported “ever use” are shown in Table 2. In general, condom acceptability in the hypothetical situation of when HIV infection in a partner was known or suspected was higher than acceptability

generally. Condom “ever use” reported in sexual intercourse with a spouse was, however, much lower than acceptability in both situations when HIV was suspected or known, as well as when these conditions were not mentioned. Further description of the proportions of women who accepted condom use is shown in Table 2.

Table 1. Socio-demographic characteristics of rural ever-married women in the Malawi Diffusion and Ideational Change Project 2006

Characteristics	Muslim		Christian
Age in years			
Age 15–24	62	(20.3)	161 (17.5)
Age 25–34	95	(31.1)	314 (34.2)
Age ≥35	149	(48.7)	444 (48.3)
Education			
No education	214	(63.7)	209 (19.2)
Primary education	120	(35.7)	778 (71.4)
Secondary or higher	2	(0.6)	103 (9.5)
Marital status			
Currently married	330	(98.2)	1052 (96.5)
Divorced/separated	4	(1.2)	11 (1.0)
Widowed	1	(0.3)	7 (0.6)
District of residence			
Rumphi	1	(0.3)	479 (43.9)
Mchinji	3	(0.9)	466 (42.8)
Balaka	332	(98.8)	141 (12.9)
HIV-related history			
Ever had HIV test	206	(61.3)	686 (63.1)
Knew HIV status	182	(88.4)	617 (90.1)
Primary partner tested	153	(46.2)	454 (42.6)
Residence after marriage			
Virilocal residence	77	(23.5)	747 (71.7)
Uxorilocal residence	238	(72.6)	217 (20.8)
Other residence	13	(4.0)	78 (7.8)
History of extramarital sex	8	(0.02)	36 (0.03)
Uses alcohol	3	(0.9)	64 (5.9)
Women with HIV test results available	143	(92.3)	1477 (93.1)

Table 2. Percentages of women who reported condom acceptability or use within marriage among women in rural Malawi, 2006

Religious denomination	Acceptability of condom use		
	When HIV infection known/suspected in the partner ^a	Under any condition	Ever used condom in most recent marriage
Catholic	70.0 (63.0–76.6)	36.1 (30.4–41.7)	16.1 (10.3–22.0)
All protestants	66.3 (62.5–70.1)	31.1 (28.1–34.2)	15.6 (12.1–19.0)
Church of Christ	61.1 (52.3–70.0)	37.0 (30.1–43.9)	10.4 (4.2–16.7)
Presbyterian	62.6 (56.0–69.3)	25.6 (20.4–30.8)	20.1 (12.5–27.8)
Indigenous churches	70.1 (63.6–76.2)	28.4 (23.1–33.6)	11.9 (7.0–16.9)
Other Christians	71.8 (63.7–79.8)	38.3 (35.8–40.8)	21.4 (13.3–29.4)
Islam	64.8 (57.6–71.9)	56.2 (51.2–61.1)	10.1 (6.7–13.7)
All Christians	67.2 (64.2–70.2)	36.9 (34.5–39.4)	14.7 (12.1–17.2)

^a Condom acceptability when one suspects or knows that their partner is HIV infected.

Association between Socio-demographic Characteristics, Religion and Condom Use Acceptability within Marriage

We assessed the association between condom acceptability when HIV is suspected in a spouse, or HIV-positive infection status is known, and socio-demographic variables. Results are shown in Tables 3.

Christian women were 71% more likely than Muslim women to report condom use acceptability within marriage if their partner was suspected or known to be HIV infected, controlling for other factors. However, the adjusted odds ratio (AOR) included the null, 95% CI 0.89–3.29. In the case of individual religious denominations, after controlling for age, tribe and education, Presbyterians were 47% less likely to have reported condom use acceptability compared to Catholics (AOR = 0.53; 95% CI 0.32–0.88). However, there were no differences in condom acceptability within marriage between Catholics and the other non-Islamic religions – other Christians, Church of Christ, and African indigenous churches (Table 4). The same was found when Muslims were considered the referent (data not shown).

Association between Condom Acceptability and Reported Use within Marriage

Women who believed that condoms were acceptable when HIV infection was known or suspected in a spouse were 10% less likely to have used condoms themselves (AOR = 0.90; 95% CI 0.43–1.88). As this model included religion as a covariate, the odds ratio represented the effect of the belief that condoms were acceptable over and above the role of religion. Removing religion from the model resulted in a substantial change in the effect estimate (AOR = 0.49; 95% CI 1.00–2.04), although the 95% CI still barely included the null.

Condom acceptability in general was associated with a 24% increase in having ever used a condom in the most recent marriage, independent of education, tribe, age and religion (AOR = 1.24; 95% CI 0.75–2.07). The effect was about half as much when religion was removed from the multivariate model, suggesting that some of the influence of condom acceptability was explained by religion (AOR = 1.12; 95% CI 0.69–1.83).

Christians were 27% more likely than Muslims to report having used ever a condom in their current or most recent marriage (AOR = 1.27; 95% CI 0.49–3.30) after controlling for tribe, though not with statistical significance.

Table 3. Unadjusted prevalence odds ratios (OR) and 95% confidence intervals (CIs) of condom acceptability among ever-married women in the Malawi Diffusion and Ideational Change Project 2006.

Characteristics	OR (95% CI)
Marital status	
Married	1.00
Divorced or separated	0.60 (0.37–0.96)
Widowed	0.53 (0.27–1.03)
Education	
No formal education	1.00
Primary education	1.57 (1.14–2.16)
Secondary education	1.57 (0.88–2.78)
Age in years	
15–24	1.00
25–34	0.95 (0.64–1.40)
Age ≥35	0.81 (0.57–1.16)
Tribe	
Chewa	1.00
Yao	1.14 (0.79–1.66)
Lomwe	3.77 (1.43–9.99)
Tumbuka	1.60 (1.18–2.17)
Ngoni	1.69 (0.79–3.62)
Other tribes	1.52 (0.68–3.41)
Had extramarital affairs in current marriage	
No	1.00
Yes	0.80 (0.36–1.78)
Religion	
Muslim	1.00
Christian	1.34 (0.82–2.16)
Religion	
Catholics	1.00
Presbyterians	0.74 (0.48–1.13)
Church of Christ	0.69 (0.43–1.12)
African Independent Church	1.02 (0.66–1.58)
Other Christian	1.12 (0.68–1.85)

Table 3. Continued

Muslims	0.82 (0.52–1.26)
Study site	
Mchinji	1.00
Balaka	1.54 (1.09–2.16)
Rumphi	1.78 (1.31–2.40)
Place of residence	
Husband's village	1.00
Wife's village	0.95 (0.71–1.28)
Other village	2.24 (1.17–4.82)
Uses alcohol	1.34 (0.57–3.29)
Ever had HIV test	1.44 (1.10–1.88)
Partner has had HIV test	1.19 (0.91–1.55)

Table 4. Adjusted prevalence odds ratio (AOR) and 95% confidence interval (CI) of the association between condom acceptability when HIV is suspected or known and religion among ever-married women in the Malawi Diffusion and Ideational Change Project 2006, controlled for education, age and tribe

Religion	AOR (95% CI)
Catholic	1.00
Presbyterian	0.53 (0.32–0.88)
Church of Christ	0.59 (0.34–1.04)
African Indigenous Churches	0.83 (0.49–1.40)
Other Protestants	1.41 (0.66–3.02)
Muslim	1.33 (0.58–3.07)

Table 5. Adjusted prevalence odds ratio (AOR) and 95% confidence interval (CI) of the association between condom use and religion among ever-married women in the Malawi Diffusion and Ideational Change Project 2006 controlling for age, tribe and education

Religion	AOR (95% CI)
Catholics	1.00
Presbyterians	0.77 (0.34–1.76)
Church of Christ	0.70 (0.28–1.79)
African indigenous churches	0.55 (0.25–1.74)
Other protestants	1.79 (0.75–4.30)
Muslims	1.26 (0.44–3.64)

Discussion

In a study of ever-married rural women in Malawi, we found no differences in condom use acceptability within marriage between Muslims and Christians. Catholics were also no different in condom acceptability compared to the majority of individual religious denominations. However, Presbyterians were less likely than Catholics to report condom acceptability when one partner was known or suspected to be infected.

We had hypothesized that Muslim women would be less likely to accept condom use or less likely to use condoms within marriage. Malawian Muslim women are more likely than Christian women to be in polygamous marriages. Being in a polygamous marriage could limit a woman's power to bargain for condom use when she suspects or knows that her spouse is HIV infected (al-Krenawi 1998; Slonim-Nevo and al-Krenawi 2006). However, the fact that condom acceptability and reported use among Muslims did not differ significantly from Christians suggests that this mechanism may not be applicable or that Christians had their own barriers to condom acceptability in this setting. Our findings may suggest that different faiths or denominations in Malawi were promoting or failing to promote condom use within marriage equally.

We recognize that our findings may not be applicable to women in other socio-political and cultural settings, even when they share the same religion with their Malawian counterparts. We suggest that the expression of and the influence of religion in people's lives differ depending on the prevailing socio-cultural and political environment. In addition, the observed difference in condom acceptability between Catholics and Presbyterians, if not due to chance, may suggest the heterogeneity that exists within the Christian faith.

The grouping of Malawian Muslims into one denomination may have masked heterogeneity within Islam. Malawian Muslims are largely Sunni Muslims, but Shias also exist. Malawian Sunni Muslims are largely Sukuti or Quadriyya Sufis. Any comparisons made between Muslims in Malawi and their counterparts elsewhere, such as in Iran (with the majority of the population being Shia and the country a theocracy), or where different sects of Sunni predominate, may be problematic (Sicard 2000; Thorold 1993; Sekalesfar 2008).

We measured condom use rather than sexual activity. We found that when compared to Catholics, only Presbyterians were less likely to believe that condom use within marriage was acceptable. However, actual condom use did not vary by religion.

Compared to Presbyterianism, Malawian Catholicism is more conservative in that it discourages promotion or use of modern contraception. As a consequence, Presbyterian churches involved in community HIV prevention programs include condom promotion within marriage, while Catholics generally do not. Catholic organizations or institutions discourage condom use, as is the situation elsewhere (Kinsman 2001; McCarthy 2009; Roehr 2009; Shannon 1991). We had expected that the Presbyterian liberal position on condoms would result in more acceptability of condoms among Presbyterians than among Catholics. However, we found the opposite. Additional studies are therefore required to explore the reasons for this paradoxical finding.

Higher proportions of women in the overall sample and in all the religions asserted that condom use was acceptable within marriage compared to the proportions of women who reported ever using condoms in their current or most recent marriage. We also found there was no difference in condom use between women who believed that condoms were acceptable within marriage and those who held no such beliefs. Our findings suggest that a positive attitude alone is not enough to influence behaviours. Condom use depends on the willingness of a partner to use one and on condom availability and access, as well on the fertility intentions of the couple (Jones et al. 2005; Oddens et al. 1994). However, we did not assess whether the women had knowledge of their partner's HIV status or had suspected that he may be infected. The questions on acceptability in an HIV serodiscordant marriage were therefore hypothetical for some, while for others this represented their actual current situation. It is possible that some women would have answered differently, had they known that the husband was infected or suspected him to be so.

In a study conducted in KwaZulu Natal, South Africa, Maharaj and Cleland (2003) reported that

a woman's perceived risk of HIV infection from her partner was an important predictor of eventual condom use. However, Anglewicz et al. (2010) reported that both men and women in rural Malawi were only able to estimate their spouse's HIV infection status poorly, often overestimating, although women were slightly better than men at estimating their spouse's HIV status. If perceived risk of acquiring HIV within marriage would encourage condom use, then more women would prefer condom use to prevent infection when they know or suspect that a partner is infected.

We noted in our study that women who had a positive attitude toward condoms were no more or no less likely to have used condoms than those with a negative attitude.

In this study, women who were widowed, separated or divorced had a higher prevalence of HIV than currently married women (22.2%, 17.6% and 5.2%, respectively). It is plausible to suggest that among widows, many had become widowed after losing their husbands to AIDS (Caldwell 1997). Some of the women, following the death of a husband, may have been pushed into poverty (D'Souza 2000; Mendenhall et al. 2007). With limited economic opportunities, some may have engaged in transactional sex, thus being exposed to HIV infection.

The absence of a statistically significant difference in HIV prevalence between Christians and Muslims deserves further study.

The present study had several limitations. Firstly, data were collected via self-reports. To the extent that study participants misreported, this may have biased our results. Although it is possible to verify reports of condom use in recent sex (within a day or so after intercourse) using laboratory markers on vaginal swab specimens (Gallo et al. 2006), such an approach was not feasible in the MDICP. Secondly, as data were cross-sectional, we cannot assign causation between religion and the outcomes. In some instances, HIV infection may have led to a change in religion.

The question about acceptability of condom use within marriage did not allow an assessment of whether the attitude differed if the woman herself, or the spouse, was suspected to be HIV infected. This may be the case, as an individual's desire, practice and commitment to prevent HIV transmission may be different, depending on whether the person himself or herself is actually or potentially infected, or whether a sexual partner is. We suspect that acceptability of condom use may differ when the husband is suspected or known to be HIV infected compared to when the woman is infected or suspected to be so. In addition, condom use is actualized within a dyadic context and involves a complex negotiation of risk and trust within the partnership (Gerbert et al. 2006). The part of the question that dealt with HIV infection being suspected (not confirmed) implied that condom use would be decided when a partner suspects the other to be infected, and the suspected partner has perhaps not discussed this possibility with the spouse. Many prevention with positives (PWP) or positive prevention (PP) programs promote an approach that encourages HIV-infected persons to take the lead to prevent further transmission through openness between sexual partners (Gilliam and Straub 2009; Montgomery et al. 2008). Individuals make proactive efforts to know their own or their partner's HIV status and not to rely on suspicion. A limitation in the current study is the fact that our assessment of reported condom use within marriage was limited because we did not assess the relationship dynamics within which use or non-use occurred.

Finally, sampling in the MDICP was in three rural districts. To the extent that these women differ in outcomes or confounders from urban residents or women in other districts of Malawi, the findings from this study may not be representative of all women in the country.

Conclusion

In a study of ever-married women in rural Malawi, there was no difference in attitudes toward condom use or reported use within marriage between Muslim and Christian women. There were also no differences in attitudes between Catholics and most of the individual religious denominations. Presbyterians were less likely to accept condom use within marriage compared to Catholics when HIV was suspected or known to occur in a spouse. Based on our findings we conclude that Christians, Muslims and the other religions (except Presbyterians) are just as likely to perceive condoms as acceptable or not acceptable within marriage. We suggest future studies should explore

the official doctrines (rules and regulations, principles, legal opinions) of religions as well as expressed teachings (what actually gets disseminated in congregations) regarding condom use.

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