Systematic Review of Condom Promotion and Use for HIV Prevention in Uganda, Rwanda, Kenya, Tanzania, and Zambia from an Anthropological Perspective

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April 17, 2014
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Executive summary

For many years it has been widely known that the proper use of male and female condoms constitutes an inexpensive and effective way to avoid new HIV infections. This knowledge has led to myriad interventions worldwide to increase the availability and use of condoms, which plausibly account for at least part of the drop in new infections in various populations. But it is also well known that resistance to using condoms is an important reason that HIV continues to be transmitted sexually.

One difficulty in changing this pattern is that condom-use takes place (or doesn’t) in private settings and involves issues that many people feel uncomfortable discussing openly and honestly with anyone. This study implements an anthropological approach that brings new insights to improving the promotion and effective use of condoms.

While academic anthropologists sometimes study questions that are similar to those of other social scientists, they most commonly proceed in a categorically different manner. Indeed, many academic anthropologists critique the very basis of most research in the other social sciences as ethnocentric. Academic anthropologists often apply post-structuralist analyses to vital issues such as HIV/AIDS but make no effort to work directly with (or against) development agencies. If the uninitiated wished to review their works, the specialized language in many would present a formidable barrier.

The overall goal of this study is to bridge this gap to address the question of condom-use and, thus, to show the wider utility of applying post-structuralist anthropological approaches to shape development work. Academic research in anthropology from a post-structuralist perspective presents a significant, even fundamental, contrast with most development-oriented research. This includes much research done by ‘applied anthropologists’ – those doing work in development and public health.

The objective of this review is to better understand reasons for current use and non-use of condoms in five African countries. The specific questions addressed are:

1. What influences people in Uganda, Rwanda, Kenya, Tanzania, and Zambia to use condoms – or not?
2. What are the anthropological interpretations of the separate and pooled relative risks (RR) by subpopulations with respect to current patterns of condom use?
3. What are the current assumptions related to the current programmatic objectives and expectations for condom use with respect to primary and secondary HIV prevention from a post-structuralist anthropological perspective?
4. What are the other societal determinants of condom use for primary and secondary prevention from a post-structuralist anthropological perspective?
5. What are complementary programmatic indicators to monitor and support condom use for primary and secondary prevention from a post-structuralist anthropological perspective?
6. What aspects of the questions above remain unanswered and how can they be answered?
7. What institutional mechanism could be suggested for monitoring the contextual changes that would have implications for continuous improvements in the culture of condom use?
8. What is the reliability and validity of the data collected on condom use? What are the prevalent data collection methods? Are there better methodologies, approaches, data collection tools to increase data quality on reported sexual risk behaviors?

To answer these questions, a systematic review of quantitative and qualitative research on condom-use and on sexuality in these five countries was undertaken. Almost 600 articles were screened initially, more than 200 were screened using the full text, and 110 were included in the review. Only two of the quantitative studies had results appropriate for meta-analysis; the rest were analyzed in narrative form.

This analysis has a two-fold character in two different ways. On the one hand, the studies are considered individually; they are arranged and discussed by topic in an appendix. This body of research is considered more generally to directly answer the eight review questions in the main report. On the other hand, the studies are assessed in both sections from a conventional public-health perspective and also from a post-structuralist anthropological one. In an attempt to make this latter perspective useful in public-health work, I have attempted to avoid its specialized jargon; this might result in readers underestimating the distance between this perspective and the approach motivating most of the qualitative research reviewed here.

The review revealed that the reliability of self-reports of condom-use – the main method of measuring this – has been shown to be quite low. Also, the almost exclusive use of binary measures, particularly relative-risk ratios, reduced the validity of the analyses. These and other problems – some intrinsic, some avoidable – mean that the main use of the quantitative research is to provide leads for qualitative research to follow. Nonetheless, it appears that a relatively promising avenue for questionnaire-based research would be to test the association between psychological orientations – for example, boldness, sexual caution, and self-efficacy – and condom-use. In addition, surveys should ask people directly why they do and do not use condoms.

The qualitative research reviewed provided more insight into reasons for condom-use or non-use. Still, it left many patterns and processes unexplained, perhaps because of researchers’ reliance on focus-group discussions, their light involvement in the communities where they did the research, and their focus on the most-common patterns, rather than on all behavior. Research should focus more on the dynamic process of sexual encounters, on how people explain their own behavior, on the moments when people have changed their patterns of condom-use, on their understanding of HIV transmission, on how effectively people use condoms, and many other issues.

The best way to understand rates of condom-use is to employ academically trained ethnographers to engage in extended participant-observation in select contexts throughout these five countries. In addition to conducting the most productive research for understanding local meanings and processes, this work will help them to tailor and apply more-standardized instruments, such as psychological tests and public-health surveys, and to interpret them. After an initial fieldwork period, they could return for briefer periods to monitor changes.
Also, social scientists trained in discourse analysis should monitor articles published on news websites, as these provide a rich and varied, if shallow, source of information as well.

In conclusion, much remains unknown about the rates of and reasons for condom-use. Tweaking current approaches with new, standardized indicators can make small improvements in this knowledge. But understanding differences across and within social divisions and the actual processes determining the patterns and effectiveness of condom-use requires a different approach, in combination with the improved application of existing methods.
Introduction

For many years it has been widely known that the proper use of male and female condoms constitutes an inexpensive and effective way to avoid new HIV infections. This knowledge has led to myriad interventions worldwide to increase the availability and use of condoms – some focusing on supply, others on demand – which plausibly account for at least part of the drop in new infections in various populations. But it is also well known that resistance to using condoms is an important reason that HIV continues to be transmitted sexually.

One difficulty in changing this pattern is that condom use takes place (or doesn’t) in private settings and involves issues that many people feel uncomfortable discussing openly and honestly with anyone. The use and effectiveness of condoms in avoiding another infection that will hasten or intensify the illness is less known, especially among the general public. This study implements an anthropological approach that brings new insights to improving the promotion and effective use of condoms.1

While academic anthropologists sometimes study questions that are similar to those of other social scientists, and in overlapping contexts, they most commonly proceed in a categorically different manner. Indeed, many academic anthropologists critique the very basis of most research in the other social sciences as ethnocentric. Four keys to anthropological research are cultural relativism, ethnographic participant-observation, holistic analysis, and detailed attention to processes.

Cultural relativism: Anthropologists have discovered that people around the world have extraordinarily different ways of characterizing their experience, possibilities, and place in the cosmos. For example: quite a few groups recognize more than two genders; in Western Apache languages, “tree” is a verb; and the Sambia of New Guinea cite biological and spiritual reasons to force boys into homosexual acts to make them more masculine. By living humbly in different societies, anthropologists have learned that other people have similarly (un)reasonable justifications for their ways and critiques of ours. And, vitally, anthropologists see how these different interpretations of existence and experience affect people’s actions. So, instead of analyzing other people’s lives according to Western ‘common-sense’ categories as if these were universal (which would be ethnocentric), anthropologists work with research subjects to

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1 The public-health literature inconsistently locates the use of condoms in ‘primary’ and ‘secondary’ prevention. Blake et al. (2003) described condoms exclusively as tools for secondary prevention – that is, to reduce the probability of infection among people who are at risk because they are sexually active. The authors described abstinence as the standard method of primary prevention – that is, to avoid risk altogether. In contrast, the PWA/PWHIV Advisory Committee (1999) saw condoms as primary-prevention tools for uninfected people and secondary-prevention tools for HIV+ people, since they would protect the latter from becoming infected with an additional strain of HIV. Thus, in discordant couples, condoms would serve as both primary and secondary prevention.

From the second perspective described above, the literature reviewed here focused overwhelmingly on primary prevention, although some studies did not clarify whether the goal of condom use – for the researchers or for the participants – was to protect the infected person or his or her partners.
understand their experience in their terms. That is, rather than learn about others, we learn from them and with them. This collaborative approach and respect for others’ perspectives leads many anthropologists to change their questions and methods as they learn from their subjects and work with them to produce knowledge that both sides will value.

**Participant-observation**: Anthropology’s central methodology is participant-observation. Anthropological ethnographers live openly among their subjects for lengthy periods (typically more than a year), learning to participate in local life as fully as possible. Their activities go beyond observation, interviews, or focus-group discussions – although all of these can be part of productive research. Participant-observation is a humbling process, as the highly educated researcher has to learn how to perform the most basic tasks, much like a child. This is a radically different position from that of a visiting expert who will enlighten or probe the locals. This continuous presence and involvement in everyday events gives the ethnographer insight into the processes of locals’ lives from the inside, it improves the likelihood that people will discuss their lives candidly, and it allows the ethnographer to understand connections between social domains that would not otherwise be apparent.

**Analytical holism** is this attention to connections between apparently distinct realms of life. Understanding sexual practices might require understanding economic relations, spiritual ideologies, political organization and beliefs, ideas about aging and human biology, or perhaps other social domains. Only ethnographic field research will reveal these relationships.

**Process**: One consequence of the above is that anthropologists tend to produce relatively small-scale studies that focus on social processes. They are unlikely to produce a large survey and then resort to common-sense suppositions to explain correlations between items; instead, anthropologists sacrifice coverage to produce highly accurate accounts based on firsthand experience. These localized analyses can be generalized to other people – that is, serve as case studies – if the extension is made carefully.

Since the 1990s academic anthropologists have striven to improve their analyses by incorporating post-structuralist perspectives. This is the main approach used by the consultant. The hallmarks of a post-structuralist approach are:

- Everything is political, from a parent’s caress to a researcher’s survey of condom use.
- No local or academic concept or practice should be taken for granted; all must be explained – including the non-existence of particular discourses or other practices in a specific context.
- All diversity deserves explanation on its own terms: labels such as ‘normal’ and ‘outlier’ are ideological and must be explained in political terms.
- The concept of objective truth is itself political; all analysis is interpretive and all meaning is debatable. Rather than ask whether something is true, we should ask what its effects are.
- Researchers should question the existence of universal laws of social change, national characters, and similar ‘metanarratives.’ This is one of the reasons that cultural anthropologists rarely use the word ‘culture’ in their specialized research.
The semblance of a unified subject – whether an individual or a group – is illusory; the convincing nature of the illusion requires analysis. For example, a political scientist has famously referred to nations as “imagined communities.”

Personal and social changes are historical – that is, highly contingent. If Uganda successfully implemented a coherent ABC strategy before, a similar effort might not work there or anywhere else now.

People can be contradictory, driven by passions, and changed by, for example, narcotics; individuals and institutions should not be reduced analytically to rational actors.

Researchers should be reflexive; that is, they should strive to understand their own efforts in the terms listed above.

Academic anthropologists often apply post-structuralist analyses to vital issues such as HIV/AIDS but make no effort to work directly with (or against) development agencies. Indeed, these researchers have created their own brand of “paralysis by analysis.” If the uninitiated wished to review their works, the specialized language in many would present a formidable barrier.

The overall goal of this study is to bridge this gap to address the question of condom use and, thus, to show the wider utility of applying post-structuralist anthropological approaches to shape development work. Thus, what distinguishes this review from others is that its main analytical framework is a post-structuralist anthropological one. Academic research in anthropology from a post-structuralist perspective presents a significant, even fundamental, contrast with most development-oriented research. This includes much research done by ‘applied anthropologists’ – those doing work in development and public health. Differences among applied and academic research are continuous rather than discrete, but, in general, academic research features longer fieldwork and post-fieldwork analysis, non-quantitative measures, less reliance on formalized interactions (for example, surveys and focus-group interviews), the use of more-holistic analyses, greater questioning of ‘common-sense’ approaches, and greater theoretical sophistication. Further, applied anthropologists and academic anthropologists attend different conferences, have different professional associations, focus on different literatures, and face different professional pressures (for example, earning tenure vs. obtaining contracts). Thus, making a post-structuralist anthropological perspective directly relevant to practical work in public health adds a markedly different perspective on how to conduct and analyze research.

The specific goals of this project are 1) to improve interventions to promote condom use by better understanding the influences that promote or retard the use of condoms for primary and secondary HIV prevention and 2) to improve future research on this topic from a post-structuralist anthropological perspective.
Review questions

The objective of this review is to better understand reasons for current use and non-use of condoms in five African countries. The specific questions addressed are:

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3. What are the current assumptions related to the current programmatic objectives and expectations for condom use with respect to primary and secondary HIV prevention from a post-structuralist anthropological perspective?

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6. What aspects of the questions above remain unanswered and how can they be answered?

7. What institutional mechanism could be suggested for monitoring the contextual changes that would have implications for continuous improvements in the culture of condom-use?

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Methodology

Inclusion criteria

Types of participants: This review focuses on the potentially sexually active population of Kenya, Rwanda, Tanzania, Uganda, and Zambia. The statistical meta-analysis considered data only from these countries. The meta-synthesis of qualitative studies primarily considered works specifically on this population but occasionally included works on other populations for comparative purposes.

Phenomenon of interest: The phenomenon of interest is the use of condoms leading to HIV prevention.

Type of outcome: The outcomes of interest are the use of condoms and primary and secondary infection with HIV.

Type of study: This review considered statistical and qualitative research focused directly on this topic and other studies, especially ethnographies, that might inform these questions from a relatively holistic perspective, prioritizing those from a post-structuralist anthropological perspective. The period under review is 1998–present.

Search strategy and exclusion criteria

The search strategy aimed to find both published and unpublished studies. A search using keywords was undertaken across several databases:

The Cochrane Library and DARE were searched for systematic reviews using the term *condom*.

The search for research articles specifically on condom use and promotion in the five countries under consideration was conducted through two portals: 1) AnthroSource, which makes available the 32 journals of the American Anthropological Association, and 2) Galileo Scholar, the University System of Georgia’s portal, which makes available more than 100 databases (including WorldCat, Google Scholar, and PubMed) and 10,000 full-text journals and other periodicals. The searches combined the relevant placenames with topical terms: (Keny* OR Rwand* OR Tanzani* OR Ugand* OR Zambi* OR East Afric*) AND (condom*)

Searches in these databases for more-holistic analyses by anthropologists were performed as follows: (Keny* OR Rwand* OR Tanzani* OR Ugand* OR Zambi* OR East Afric*) AND (sexual* OR erotic*) AND (anthropolog* OR ethnograph*)

In addition, the Measure DHS website was searched for analyses based on quantitative surveys from each country.

Additional sources were identified through: the reference lists of identified reports and articles; a Google Alert (*condom* AND (Uganda* OR Rwanda* OR Kenya* OR Tanzania* OR Zambia* OR “East Africa” OR “East African”)); recommendations from researchers and other professionals in the field; and mentions in news articles. Unpublished reports were identified through recommendations from experts and by browsing websites of organizations active on this issue.
Searches were performed in English for studies published 1998-present; however, items published in English, French, Spanish, Portuguese, Italian, or Indonesian would have been considered for inclusion, had they been found.

Search results were loaded into EPPI-Reviewer software for appraisal, coding, and synthesis. The first step was to review the title and abstract of each reference to exclude those that:

- were published outside of 1998–2013
- did not include substantial information about the potentially sexually active population of at least one of the five countries under consideration
- did not focus substantially on the topic of this review
- were not research publications
- were not in one of the six languages listed above.

Assessment of Methodological Quality
The researcher assessed the papers selected for retrieval for methodological validity prior to inclusion in the review based on standardized criteria that are found in critical-appraisal instruments developed by the Joanna Briggs Institute. The questions considered were:

Assessment of Qualitative Research
- Is there congruity between:
  - the research methodology and the research question or objectives?
  - the research methodology and the methods used to collect data?
  - the research methodology and the representation and analysis of data?
  - the methodology and the interpretation of results?
- Is there a statement locating the researcher culturally or theoretically?
- Is there a discussion of the influence of the researcher on the research, and vice versa?
- Is there representation of participants and their voices?
- Is there a clear relationship between the conclusions and the analysis or interpretation of the data?

Assessment of Expert or Firsthand Analysis
- Is the source of the opinion clearly identified?
- Does the source of the opinion have standing in the field of expertise?
- Is the opinion’s basis in logic/experience clearly argued?
- Is the argument developed analytical?
- Is there reference to the extant literature/evidence and any incongruence with it logically defended?
- Is the opinion supported by peers?

Assessment of Quantitative Research
Randomized controlled trial/pseudo-randomized trial
- Was the assignment to treatment groups truly random?
- Were participants blinded to treatment allocation?
Was allocation to treatment groups concealed from the allocator?
Were the outcomes of people who withdrew described and included in the analysis?
Were those assessing outcomes blind to the treatment allocation?
Were the control and treatment groups comparable at entry?
Were groups treated identically other than for the named interventions?
Were outcomes measured in the same way for all groups?
Were outcomes measured in a reliable way?
Was the appropriate statistical analysis used?

**Comparable cohort/case control studies**

- Is the sample representative of subjects in the population as a whole?
- Are subjects at a similar point in the course of their condition/illness?
- Has bias been minimized in relation to selection of cases and of controls?
- Are confounding factors identified and strategies to deal with them stated?
- Are outcomes assessed using appropriate criteria?
- Was follow up carried out over a sufficient time period?
- Were the outcomes of people who withdrew described and included in the analysis?
- Were outcomes measured in a reliable way?
- Was appropriate statistical analysis used?

**Results of search and assessment**
The title and abstract of 597 works were screened for inclusion using the criteria listed above. Of these, 226 were screened using the full report. Data from 115 sources were read for extraction, although 5 of these were excluded due to poor quality. Of the final 110 studies included, 40 dealt with locations in Tanzania, 27 with Kenya, 26 with Uganda, 16 with Zambia, and only 2 with Rwanda. Three additional studies were included even though they did not focus on one of the five specified countries; One each dealt with societies worldwide, with many African countries simultaneously, and with Mozambique. These total to more than 110 studies because some individual studies analyzed behavior in more than one of the targeted countries.

**Data collection**
The researcher extracted qualitative data from papers included in the review based on a standardized data-extraction tool developed by the Joanna Briggs Institute. The data extracted included specific details about the methodology, phenomena of interest, setting, geographical location, culture, participants, method of data analysis used in the primary study, the author’s conclusions, and any comments that the researcher considered appropriate to add.

Likewise, quantitative data was extracted from papers included in the review based on a standardized data extraction tool from the Joanna Briggs Institute. The data extracted included specific details about the setting, population characteristics, interventions, outcomes of significance to the review question, study methods, the author’s conclusions, and any comments that the researcher considered appropriate to add.
Data synthesis
The researcher pooled qualitative research findings where possible. This involved the aggregation or synthesis of findings to generate a set of statements that represented that aggregation, by categorizing and grouping the original findings on the basis of similarity in meaning. These categories were then subjected to a meta-synthesis in order to produce a single, comprehensive set of synthesized findings that can be used as a basis for evidence-based practice. Where pooling was not possible, the findings were presented in narrative form.

Similarly, the researcher pooled quantitative papers for statistical meta-analysis in the single case where it was appropriate. A random effects meta-analysis was performed to calculate a pooled relative risk (RR) and 95% confidence interval (CI) for the two studies combined. Interpretations of such RR were offered from an anthropological perspective. In the rest of the cases, where statistical pooling was not possible, the findings were grouped appropriately and presented in narrative form.

Next, the researcher compared the qualitative and quantitative syntheses and analyzed them from a post-structuralist anthropological perspective. Some of the goals motivating this part of the project are to identify: unquestioned assumptions in existing research, unasked questions, potential answers to important questions, and different ways of producing answers to such questions. Post-structuralist anthropological analyses include a large element of open exploration in order to provide the most comprehensive explanation of the researcher’s observations. The researcher’s encounter with new perspectives and information can lead him or her to consider new approaches. As such, this type of study typically does not follow a rigid, pre-determined path.
Findings from the Systematic Review

Influences on condom-use
The articles reviewed show that a large variety of reasons influence a subset of people in Uganda, Rwanda, Kenya, Tanzania, and Zambia to use or not use condoms. However, understanding, predicting, or changing the reasons that a particular couple will use a condom in a particular context remains relatively undeveloped.

Any individual is likely to have contradictory beliefs, motivations, and impulses. It is possible that one strong reason to use condoms can, in a certain situation, outweigh several reasons to not use them. Analyses that elucidate how different people in these five countries manage such complex, contradictory influences are needed. Unfortunately, with only a few exceptions, research has yet to show how these influences come into play in concrete situations, their relative importance, their increasing or decreasing salience, or their comparative importance among different social groups. Thus, the minimal structure of the following list reflects the results of the research reviewed.

Further, almost all of the following influences were reported for specific cultural contexts, locales, and historical contexts; among particular subjects; and using particular methods. In short, this list is not timeless or universal. Readers will find more information about each of the listed reasons in the detailed review of the literature in the first appendix.

Reasons for condom-use
The research reviewed here convincingly demonstrates several influences that favor people’s use of condoms. This list is probably incomplete, but, when a man does wear a condom during intercourse, he or his partner might have been swayed by one or more of the following:

Personal/Interpersonal
- The partner with the power to decide these issues demands or agrees to the use of condoms.
  - In heterosexual sex, the male partner often has the ability to unilaterally decide this issue, whether because of economic or physical power over the female partner or because of women’s learned expectations. In homosexual encounters involving male sex workers, the client usually decides.
- Desire for contraception
- Perception that using condoms is popular within their social milieu
- A commitment to positive-living (not necessarily for disease-prevention) / hope / future-orientation
- Fear of HIV / sexual caution
  - This obvious reason received almost no direct attention from researchers. It deserves sustained, detailed consideration.
  - This fear is intensified when the partner matches stereotypes of infected people.
  - It has not been established that a desire to avoid infecting sexual partners is a widespread motivation for men or women, but it was reported in one study.
- Fear of spiritual pollution
  - For example, some people believe that using condoms will help them avoid taboos on post-partum sex.
Facilitating factors

- Belief condoms work
  - Cited as important in several studies
- Context of sex permits it
  - For example, there is storage available and sufficient light, space, and time
- At least one partner is familiar with how to use them
- Condoms are available and affordable
  - Availability includes not only their physical availability but the lack of social barriers, such as openly judgmental dispensers
- Boldness to demand condom-use
  - At least among female sex workers
- Perceive relationship to be short-term
- Possibly
  - Already have children and live in a low-birthrate locale
  - Have matrilineal kinship relations and thus receive less pressure from husband for children

Social

- Respected figures advocate condom-use?
  - This has been asserted but not shown.

Interventions

- Evidence exists but is not overwhelming that entertainment-education in the form of soap operas can influence some members of the audience to use condoms in particular circumstances.

Reasons against condom-use

Personal/Interpersonal

- Desire for pregnancy
  - This is an extraordinarily important reason, including among HIV-discordant couples.
- The partner with the power to decide these issues refuses to use condoms.
  - Given their economic and social dependence on male partners, most women would not challenge their partner’s decision. Sometimes sex workers who insisted on condom-use were raped without condoms. Indeed, rape of young women, presumably without condoms, appears widespread in some locales.
- More money for sex workers for not using condoms
  - Sex workers typically could charge twice as much for not requiring condoms
- Belief condoms do not prevent HIV, including that:
  - They are permeable to HIV
  - They are pre-infected
  - Spiritual forces control infection, not human inventions.
- Decreased sexual satisfaction for at least one sexual partner
  - Both men and women report problems, whether with decreased sensation, painful abrasions, or failure to mix fluids, which has greater ideological significance than mere physical pleasure.
• Fear of serious ancillary health problems
  o Some women fear that condoms will get stuck inside them, causing infertility, or that they can cause other maladies, such as cancer.
• Partner does not appear infected.
  o The partner does not match stereotypes of infected people.
  o Some people believe that they can sense infection in others.
• Belief that anal sex is safe.
  o Apparently this misconception results from the overwhelming focus on heterosexual transmission in this region.
• Sense of special protected status
  o Belief in personal immunity
    ▪ This apparently can be increased by successive negative HIV tests.
  o Belief in personal luck
• Believe self to be infected already
  o This includes people who have received HIV testing and those who have not.
  o Research subjects in this category were rarely reported to have expressed concern about infecting their sexual partners.
• Fatalism
• Sense that other dangers are more pressing or will kill them first
  o For example, among street boys and fishermen
• Religious beliefs oppose condom-use
• Belief that sexual activity from biomedical perspective is not sexual activity.
  o For example, street boys do not see forced anal penetration as sex.
• Legal barriers to unmarried people having sex and thus obtaining condoms.
• Belief that condoms are alien to long-term relationships.
  o Even among sex workers
• Behavioral “scripts” do not include condom-use
  o Thus, condom-use might not even come into consideration.

Facilitating factors
• Context of sex discourages condom-use.
• Neither partner is familiar with how to use them.
• Condoms are not available or affordable.
• Alcohol reduces caution.
• Women’s perception of sexual competition against other women for the financial, emotional, and status benefits of a relationship with a man
  o This also includes competition among sex workers.
• Different understanding of disease transmission, especially HIV, from biomedical explanations
  o For example, the belief that disease results from the accumulation of multiple exposures to a disease agent
  o This might occur even among people who test well regarding biomedical teachings.
• Poor understanding of HIV transmissibility and progression, leading to overestimates or underestimates of local infection rates, thus increasing the sense of inevitability or overconfidence
• Belief that proposing condom-use implies distrust
• Discussing sex explicitly is taboo.
• Condoms are not perceived to be erotic or otherwise attractive per se.
• Belief that semen helps females to develop and thrive.
• Economic changes increasing women’s economic dependence on men or tying this
dependence to sexual relations

Social
• Respected figures express opposition to their use.
• Respected figures supply misinformation about condoms to discourage their use.
  ○ This is reported for religious figures, medical workers, and teachers.
• Contradictory knowledge is communicated in a more persuasive fashion than biomedical
  knowledge.
• Condoms have an overall negative image, beyond any specific beliefs.
  ○ as seen in metaphors such as “political condom”

Assumptions shaping research
The preceding list springs from research that was shaped by both explicit and implicit
assumptions. These assumptions define basic relationships between people and disease and
between researchers and subjects. Questioning the effects on research of some of these
assumptions and perhaps designing studies based on differing assumptions might yield improved
outcomes.

The most basic assumptions in the research reviewed are perhaps:

• Reducing HIV infections is an unmitigated good. For example, the logistical difficulties,
  reduced pleasure, symbolism of distrust, and unwanted contraception resulting from
  condom-use pale in comparison to the benefits of preventing HIV.
• It is possible to understand this issue through research.
• Biomedical approaches to explaining and responding to disease are superior to others and
  have the potential to be completely sufficient.
  ○ For example, spiritual explanations of disease hinder improvement.
• Every person can understand biomedical advice sufficiently to implement it and can
  understand research well enough to participate effectively.
• It is better for biomedical experts from elsewhere to intervene than to allow non-experts to
  handle HIV/AIDS locally.
• Interventions can reduce HIV infection rates.
• Individuals are unitary and stable; that is, their beliefs, desires, and sense of self remain
  essentially the same across contexts.
• Condom-use or non-use is the result of conscious, calculated decision-making.
• All available condoms are equivalent.

Less-basic assumptions include:
• Broad, common-sense groupings (e.g. by country) are analytically and programmatically valid.
• Biomedical and sociological categories from Western academic discourse are universally applicable for analysis (e.g. ‘married’ and ‘sex’).
• Historical context does not matter; that is, lessons from one place and time (at least within sub-Saharan Africa) apply to other places and/or times.
  o For example, the Ugandan approach in the 1990s could be applied successfully now or elsewhere.
• People who use condoms do so effectively.
• Objections to condom-use are incorrect.
• The availability of lubricant not included with the condom is unimportant.

Common but not universal assumptions are:
• Asking people directly to explain their behavior is not productive.
• Age does not matter much in analyses or interventions; for example, developmental differences between adolescents and full adults are unimportant.
• Men do not want to use condoms, but women do.
• Transactional sex is the riskiest.
• Knowledge of infection is key to fighting it.
• People’s historical experience – for example, of war – is not germane.
• Reasons for condom-use are unimportant; identifying effective interventions is sufficient.
Assessment of prevalent methodologies

The literature reviewed has methodological strengths and weaknesses for identifying and explaining condom-use. Unfortunately, a great deal of it has serious problems from within the dominant research paradigms in public health, and very little of it comes close to employing post-structuralist or academic anthropological perspectives. Despite including more than one hundred studies, this review has not yielded answers to some basic, vital questions regarding condom-use. Perhaps it is time to try alternative approaches.

One of the most consistent limitations of the research is the lack of detail included in published accounts. Statistical procedures are not described with sufficient information to assess them, much less replicate them. And important features of interventions and data-collection are left exceedingly vague, making it difficult to evaluate their quality or compare them to others. For example, Lightfoot et al. (2007) reported singularly successful results for “a culturally adapted 18-session behavioral intervention based on cognitive behavior therapy” for youth living with HIV. But the intervention was not described further, and it is unclear whether the nurses administering the intervention also collected participants’ self-reports of condom-use. Given the intervention’s reported level of success, which is extremely high, other researchers should hunt for the particulars of this project’s operation.

Perhaps because of this lack of information and because of a willingness to accept authors’ findings uncritically, many studies repeated methodologies that had been shown to be ineffective – especially face-to-face survey-interviews on sensitive subjects. For example, one of the best demonstrations of their unreliability came from the MEMA kwa Vijana project (Plummer et al. 2004), yet the long-term assessment of the same project employed surveys again, which biomarkers again showed to be unreliable (Doyle et al. 2010).

The following discussion evaluates the prevalent methodologies in the literature reviewed. One commonality is that all research – that is, both quantitative and qualitative – is fundamentally interpretive. Statistical researchers have created a false aura of objectivity around their work; the interpretive nature of qualitative studies tends to be acknowledged more openly.

Quantitative methodologies

In general, the quantitative studies included in this review either tested the effect of a public-health intervention or searched for correlates of condom use. In both cases, few studies directly addressed the question of why a particular intervention or social attribute led some people to use condoms, even by inference.

Questionnaires

By far the most prevalent data-collection method for the quantitative analyses reviewed here was a highly structured questionnaire with predefined potential answers for many questions, administered face-to-face and orally. Many of these surveys were quite long, especially the DHS. Some surveys were applied by individuals who came from outside the locale, whereas others were applied by personnel employed in biomedical clinics or sexual-health programs.
The available evidence indicates that reports of condom-use (and of sexual activity) from these questionnaires are highly unreliable. In the few cases when researchers have used biological markers (see below) to verify self-reports, they have found large-scale inconsistencies: generally respondents claimed less sexual-activity than markers showed and, when they reported having sex, they claimed greater condom-use than markers corroborated. Studies comparing different methods of interview also revealed unreliability in reports of sexual activity and sexual abuse. Unfortunately, the variables being correlated with condom-use, such as age or marital history, have not been subjected to similar tests of reliability. Despite such well-known problems, many quantitative researchers used survey data uncritically.

Also, the process of administering the questionnaires produced unknown levels of unreliability. Research reviewed here has shown that linguistic and ideological differences have likely made the questionnaires less uniform in practice than in design. For example, disease terms, including for HIV, are more or less inclusive across languages (for example, see Coast 2007 and McCombie 2003). And translators as well as interviewers substituted euphemisms for sexual intercourse because of the interviewers’ discomfort speaking directly about these topics or because of their perception of respondents’ discomfort. In addition, interviewers sometimes were personnel involved in the intervention that was being evaluated and thus might have steered respondents to particular answers; in other cases, interventions relied on personnel who openly rejected the aims of the project — especially the promotion of condom-use. In any case, respondents’ perception of the interviewers, of the confidentiality of their answers, of the aims and importance of the project, and much more will differ in ways that affect their answers.

Aside from the effects of unreliability, the validity of the results was limited by narrow concerns and undermined by the choice of statistical measure. The questionnaires typically asked about condom-use per se and some asked about obviously linked issues, such as condoms’ availability. These are highly appropriate, valid concerns. The variables with which condom-use was correlated included standard, common-sense categories that have not yielded important findings in explaining condom-use but which do seem necessary to include, such as education.

More-promising types of variables, such as those measuring psychological orientations, appeared rarely and then were measured in questionable ways. The detailed literature review in the appendix contains a detailed discussion of an example from Vaughan et al. (2000), whose measurement of participants’ self-efficacy — a good idea — had several weaknesses that the authors did not acknowledge. The danger is that other researchers might read Vaughan et al.’s summary statements without considering the details of this question and that they then might cite this study as an example showing that self-efficacy is key to condom-use. Indeed, it is rare for the articles reviewed here to include critical appraisals of others’ research; instead, unqualified acceptance of reported findings is the norm.2

Attempts to understand processes or motivations (fear? social pressure?) did not appear in these studies. Most disappointingly, none of the quantitative studies reviewed here directly asked respondents the highly valid question of why they used or did not use condoms.

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2 Examples of authors making unsupported summary statements include Matovu et al. (2006) and Hattori et al. (2010). The detailed review in the appendix has more information.
**Biological markers**

Collecting biological markers constitutes a contrasting method that has served as a way of checking participants’ reports of sexual activity and condom-use. Biological markers include the results of tests for new STIs, pregnancy, and sperm in vaginal smears, each of which would indicate that the person tested had engaged in sexual activity without using an effective barrier (or other contraceptive in the case of pregnancy). These markers show up only in limited windows of time, so their absence corroborates but does not confirm claims of abstinence or consistent condom-use. Thus, they usually were interpreted to provide underestimates of the unreliability of self-reports, and this interpretation seems reasonable.

Nonetheless, condoms are not perfectly effective, even with proper use, so some level of unreliability is to be expected even with recommended use. And, since researchers did not explore the type of condom-use that respondents reported, it is possible that some respondents with positive biomarkers used condoms but did so ineffectively.

**Relative risk as the standard measure**

The vast majority of studies employed either relative risk as the basic statistical measure or the odds ratio, which, as a binary measure, shares many of the features discussed below for relative risk. In most cases, the calculations of relative risk might serve, at best, as a prompt for more-informative research. As a final result, it is a method with severe faults for explaining condom-use. Moreover, in much of the literature reviewed, the relative risks were calculated based on weak data, which were produced inconsistently between and sometimes within studies. From an anthropological standpoint, the risk ratio appears to be the object of a research fetish, the choice of which apparently requires no justification.

The best use of the relative risks calculated, or at least calculable, from published DHS surveys is to identify significant differences among identified groups, which can subsequently be explored more fully. For example, in the Uganda AIS from 2011, respondents identifying as Karimojong have much higher rates of syphilis and lower rates of HIV than members of other groups, and Karimojong refused HIV testing at a much higher rate than any other group. Yet the majority did cooperate with testing. What complex social processes have produced these statistical patterns? It seems likely that programmatic assumptions based on research among other groups or at the country level would not apply neatly to the Karimojong.

This principle of specificity extends to even the most promising results from interventions. For example, Hattori et al. (2010) found that their measure of “sexual caution” significantly predicted condom use in three countries, but it predicted non-use in a fourth. This difference requires explanation (which the authors did not provide), as do the differences among respondents within a single country. How does sexual caution develop, and how does it affect the development of individuals’ relations with each other?

**General critique**

If the main value of relative-risk ratios is in prompting further research, what are anthropological critiques of relative-risk calculations for explaining condom-use? Some involve the method itself; others concern the implementation of research.
Grouping as the unit of analysis
A relative-risk ratio encourages a binary response: does a significant difference exist between one group and another, especially between the group receiving treatment and the control? If the answer is yes, then the treatment deserves emulation; if not, then it does not. Perhaps the researchers will also divide the participants into subgroups — for example, by gender, religion, age, education, ethnic group, serostatus, or marital status — and calculate the result for these groupings as well. But in any case the logic of the operation and its discussion in the literature is the same, for example: VCT is effective among discordant couples, male circumcision does not lead to less condom-use, sexual caution promotes condom-use in one country and discourages it in another. Such conclusions do not account for — and discourage interest in — the differences between the majority and minority groups, or the differences within each of these groups. For example, HIV+ men might favor condoms to protect themselves from further infection, to protect their partners, as a response to an ultimatum from their partners, and/or as part of a new, “positive” outlook.

The widespread emphasis on statistical significance, even above effect size, can increase this tendency to overgeneralize. In large-scale studies, a small ratio can still yield a significant difference, and this typically gets reported in terms similar to those with larger effects. Thus, the behavior of a large minority often receives inadequate or no attention.

Assumption of binary possibilities
Basic statistics textbooks are filled with guidance that statistical measures should be chosen to fit the type of data and that data should not be converted into a different type for the convenience of using a particular measure. Yet the establishment of risk ratios as a one-size-fits-all measure leads to the regular repetition of this practice. This is true both for the putatively dependent variable (condom-use) and for the independent ones, such as receiving an intervention or having a particular social status.

Most central is the question of how to measure condom-use. Typically, studies ask whether participants used a condom during their last bout of sex. Insofar as this question represents a strategy for ensuring the most-accurate recall, it yields an appropriately binary variable; in contrast, insofar as this question’s popularity springs from the desire to create a binary variable for a pre-determined statistical measure, it is not appropriate. Indeed, most researchers rightly want to discern longer-term patterns, and thus many have asked how regularly participants used condoms over a specified period, such as the past six months. Typically, participants were given three choices: always, sometimes, and never. This is not a binary choice, yet some researchers used relative-risk ratios to analyze it, performing separate analyses for ‘always’ and ‘sometimes.’ Moreover, ‘sometimes’ is a continuous variable that could contain a wide range of values; its analysis as representing a single value likely hides important differences among respondents.

3 If researchers insist on converting the frequency of condom-use into a binary variable, then perhaps they should first combine ‘sometimes’ and ‘always’ into a single variable to measure differences in numbers of people using condoms and subsequently compare this result to the ratio of people answering ‘always.’ This second measure would verify that the increase is uniform (from ‘never’ to ‘sometimes’ and from ‘sometimes’ to ‘always’) rather than a collapsing of individuals answering ‘never’ and ‘always’ into the category of ‘sometimes.’
Presumably, the ultimate question is: to what extent do participants reduce their risk of HIV infection by using condoms? Leaving aside the issue of effective use, researchers would then want to know how frequently participants use condoms with different kinds of partners and perhaps performing different sex acts. This is a complex question, as, on average, sex with a streetwalking sex-worker is riskier than sex with one’s long-time spouse. And the person who has sex four times without a condom and once with one should have a different analytical value than someone who uses a condom four times and eschews one once. So, if performing a statistical exploration, perhaps an index should be created, taking into account the riskiness of the type of partner and the frequency of sex with each type of partner. Such a statistic would provide a more valid indication of differences among people than would the relative-risk ratio.

This problem of *de rigueur* binary analyses is even more troublesome for variables such as marital status, in which never married, married, divorced, and widowed — among other possibilities — do not represent a binary choice (and certainly there is no control group) but have been analyzed as such (for example, Silas 2013). The same is true for religion and could be true for ethnicity and occupation, among other variables.

In short, some valuable questions are binary. But many are not, and the expectation of relative-risk ratios within this genre of research has led to unhelpful distortions that can be ameliorated using other approaches, even statistical ones.  

**Limited value of the measure**

Relative-risk ratios can provide valuable information to answer some questions. But in many ways the results can lead to misinterpretation or simply not address central concerns. As mentioned above, the significance of an association can be misleading, as a large effect in a smaller study might have the same significance as a small relationship in a large one. The term itself leads even social scientists, in my experience, to confuse statistical significance with practical significance. Officially, statistical significance merely indicates the likelihood that the direction of the calculated ratio (for example, greater condom-use) deserves to be heeded. Once significance is established, the size of the ratio should be highlighted. But this, too, can be misleading. Social scientists, journalists, and consumers of health reports often misinterpret these ratios, mistaking them for something like absolute risk. Thus, an intervention that increases the rate of condom-use

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4 The main purpose of this report is to present a post-structuralist, anthropological perspective, which does not support the continued overreliance on statistical approaches. However, a statistician or even a textbook on statistics should be able to identify the most appropriate measure for a given situation. Even at a basic level, such measures cannot be identified without first determining, for example: whether the universe of results should fit a normal distribution; whether the variables are categorical or numerical and, if numerical, whether they are discrete or continuous; whether a time-series of data will be analyzed; whether some scores are best converted into their logs; and so on. The academic literature increasingly features relatively exotic measures, such as Bayesian analyses, that might fit processes such as human decision-making better than straightforward correlations or multivariate analyses. The type of calculations should be determined as part of the initial design of an intervention or other research project, to ensure that the proper information is collected.
by 100 percent is perceived to make it universal or, in another misinterpretation, to make condom-use prevalent among two-thirds of the population (since the ratio is 2:1), when in fact condom-use might have increased from 1 percent to 2 percent of the study sample.

It is difficult to not believe that this genre of study has institutionalized the focus on statistical significance, with a secondary focus and termination of interest at the size of the relative-risk ratio, because so much of it is produced by researchers with a stake in showing the success of an intervention.

In contrast, policymakers and potential users of condoms are more likely to have interest in absolute risk or something similar, which might explain the common assumption that relative-risk ratios are actually something else. Policymakers would reasonably want to know how many and what percentage of infections will be avoided. Potential condom-users might want to know their chances of infection if using or not using a condom in a particular sexual encounter (even though such figures would depend on self-reports, which are unreliable). I did not encounter research that highlighted these absolute figures, and none mentioned highlighting them to participants in an intervention. (Indeed, as I mention elsewhere, it is possible that some individuals develop the mistaken belief in their own immunity because of the disjuncture between a) the impression of extremely high risk that public-health messages communicate and b) these individuals’ ability to engage in relatively risky sex without incurring infection.)

**Does not reveal processes**

Most anthropologists focus on processes, which the relative-risk ratio does not elucidate. At most, researchers can use relative-risk calculations to form hypotheses about processes. For example, if discordant couples significantly increased their condom-use after VCT, was this because many of them discussed it afterward? If so, did conversations that proceeded in one fashion lead to condom-use more often than ones that developed in a different way? Could this approach sway others to adopt condom-use, if public-health messages were communicated in a similar fashion? Explaining condom-(non)use in one situation or another depends on detailed attention to such processes, whether they occur over brief or lengthy periods. Most of the quantitative studies focused on documenting statistical associations or trends but not reasons.

**Critique of pooling the reviewed literature**

**Weak studies**

Even if relative risk were the single appropriate measure, there are several reasons to question using the results from these studies individually and especially in combination. Many of these weaknesses are detailed in the systematic review. They include:

- the failure to ask key questions, such as people’s reasons for (not) using condoms
- the dependence on ‘common-sense’ categories that might not reflect local social distinctions or meanings, such as “married”
- highly dubious responses to questionnaires

**Assumption of universality**

In addition, pooling the studies reviewed would entail other sorts of over-generalization, in addition to the ones discussed above. The results from such studies were collected under wildly
different circumstances, using different procedures, spanning numerous political, ethnic, economic, and other social groups. Even two studies from the same place might have been separated by several years, a period in which considerable social change — especially related to HIV/AIDS — might have occurred.

This sort of pooling springs from a problematic assumption of universality. Otherwise, why combine data from studies among such diverse peoples, places, and times? This could lead to highly misleading results. For example, more studies mentioned that their participants preferred “dry sex,” which would make the pooled results dubious for entire regions where “wet sex” reigned. Similarly, almost all of the studies in the review focused on societies with patrilineal kinship, but an analysis centering on studies from parts of Zambia would be dominated by matrilineal societies, which might well have different sexual dynamics. As another example, street boys in Mwanza, Tanzania, did not describe forced anal copulation with other boys as a type of sex, which would significantly alter their answers on a questionnaire about their sexual histories (Lockhart 2002).

Beyond these fundamental issues, it is problematic to combine even studies that apparently cover the same topic, such as peer education, because they were not implemented in similar ways. Indeed, only two studies of male circumcision were similar enough to admit meta-analysis. From the universalistic perspective guiding much quantitative research in public health, this is a problem; if this lack of uniformity sprang from a clear recognition of local specificity, it would be a strength.

A further problem with a universalistic approach is that it fails to recognize that different people require different motivations to perform the same acts. Advertisers call this ‘market segmentation.’ So, for example, it might be that an intervention to create a larger audience for a public-health soap opera will not yield proportionally larger changes in behavior.

Conclusion
In short, anthropologists are more likely to study the endeavor of statistical analysis than they are to produce such analyses themselves. Statistical analyses, and relative-risk ratios in particular, can be conducted with more or less care, but in any case they cannot document processes to show how variables become significantly correlated with condom-use or non-use. For example, how do psychological orientations develop? How do ideologies about sex and disease develop? How, and under what circumstances, do they get expressed? How do these various, coexisting and sometimes contradictory influences find expression in individuals’ lives?

At best, relative-risk ratios can help researchers to raise questions that other forms of study can answer.

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5 If statisticians choose to pool results from such studies, they should at least confirm that the participants constitute a representative sample of the overall population for which generalizations will be made. The subgroup of anthropologists who perform cross-cultural statistical analyses take pains to choose their sample of studies to account for diversity. (Nonetheless, most anthropologists reject even this approach as, among other things, overgeneralizing.)
**The use of quantitative indicators**

From a post-structuralist perspective, indicators as used in public health foster a distorted image of the issue under consideration, in this case, sexual — or is it health? — practices. Among the problems:

- They encourage generalizations across a predefined group that reduce interest in the experience and practices that are not categorized as predominant.
- Indicators encourage a static view of individuals that pays insufficient attention to context.
- They group people according to categories despite significant diversity within each category. Slaymaker (2004) points out ways in which the same results for an indicator might spring from markedly different processes.
- They discourage attention to the coexistence of multiple, contradictory motivations, impulses, expectations, and so forth in a single person.
- The supposed indicator of sexual practices might actually be the effect of those practices, or the two might have a complex relationship. For example, people might perceive themselves at low risk because they use condoms, which they use because they see unprotected sex as high-risk (see Van Rossem and Meekers 2007).
- Indicator-based results require explanation through further, process-oriented research, but they appear to many as the final product. That is, many regard qualitative work as “formative” to quantitative analysis, but reversing this approach is more productive. Even better would be: qualitative research followed by quantitative measures followed by qualitative research to explain the results.

From an anthropological perspective, the use of indicators is questionable because they depend on assumptions, for example in the creation of categories, that might not apply to local understandings or practice.

Thus, any of the items associated with condom use or non-use in the systematic review or from the list of unanswered questions can be turned into an indicator, but to do so would be to continue in the same vein as before, only with new items to compute. A post-structuralist, anthropological perspective does not support merely tweaking the most-common current approaches, even those employed by most qualitative researchers.

Nichter (2001) provides an example of a (highly prestigious) medical anthropologist who attempted to produce a survey that mitigated many of these problems. He used qualitative, ethnographic research in Southeast Asia to create a more appropriate questionnaire and to interpret its results. He problematized basic terms (e.g. CSW, antibiotic, germ, risk, and disease) but with the goal of improving health services. His work showed that local understandings of the development of illness and its treatment could be quite different from public-health perspectives, even when they seemed the same. The larger point was that indicators must be developed and interpreted differently for each setting. Nonetheless, the resulting survey still suffered from the weaknesses above, albeit to a much lesser extent. As such, Nichter’s work provides an imperfect model — but the best that I have found — for integrating a post-structuralist, anthropological perspective with existing public-health expectations.
Qualitative
In balance, there is good reason to believe that, compared to quantitative approaches, qualitative research can produce more-accurate results regarding sensitive topics such as sexual behavior.

Prevalent data-collection methods
Perhaps because statistical analyses enjoy greater prestige in many policymaking bodies, some qualitative researchers strive to achieve a similar uniformity in the production of knowledge, whereas others proceed in a more ad hoc fashion. In general, though, qualitative researchers have more opportunity to alter their approach to take advantage of unexpected circumstances or information.

Thus, qualitative methods employed in studies that are directly concerned with condom-use are varied. They include, most prominently:

- focus-group discussions, composed of people chosen purposively by the researchers or by local political heads
- interviews in differing contexts and formats, but usually relatively unstructured, with only a list of topics for the interviewer to raise.

The analysis typically was more uniform than the methods, with one or more researchers searching interpretively for patterns without recourse to statistical tools.

Qualitative studies have the potential to reveal diversity that statistics mask; unfortunately, most of the research in the review focused on describing central tendencies. On the other hand, qualitative researchers were more likely to create or alter analytical categories based on the statements of research subjects; quantitative research could include this sensitivity to local categories, as suggested later in this report.

Interviews
There is reason to believe that the results from qualitative interviews shared some problems of reliability with quantitative results. The contexts of the interviews are often quite similar, and respondents will have many of the same motivations, just as interviewers will have similar attitudes. Indeed, the few studies that employed a less-formal approach – closer to full participant-observation – noted that participants often changed their stories over time, generally to include more embarrassing information. Plummer et al. (2004), again, provides a stellar discussion of this.

Nonetheless, qualitative interviews provide interviewers with the opportunity to ask for clarification and to follow-up on contradictory statements, thereby increasing the reliability of answers. Also, they presumably suffer from fewer problems with translation, as the relatively conversational format would allow the interviewer and respondent more space to clarify terms.

The validity of the information gathered in most of these interviews was less limited than in quantitative studies. First, in many studies respondents were asked whether and why they used or did not use condoms, and they replied in their own terms — not ones pre-defined by the researchers. However, researchers sometimes asked one question and analyzed it as another; for
example, they asked respondents for their impressions regarding general patterns of condom-use and then analyzed the responses as if they applied to the individual answering. More importantly, only in rare cases did researchers ask respondents for reasons that they changed their long-term behavior or why they used condoms in one encounter but not in another of the same type (e.g., why a married couple used condoms one day but not the next). Only a few researchers encouraged respondents to discuss changes with regard to broader social and political trends. Finally, no study asked how people actually used condoms, to learn whether they had done so in an effective manner.

**Focus-group discussions**

The reliability of focus-group discussions was unexplored in this literature. If researchers’ goal was to understand participants’ “real” thoughts and feelings, across all contexts, then probably the reliability was very low. This is because people not only speak but think differently in different contexts; for example, youth surrounded by other youth will express themselves differently from those in a cross-generational focus group. And heterogeneity goes well beyond age and gender; indeed, as one advocate of focus groups cautions: “It is not uncommon for two discussion groups, groups that are identical in demographic and life stage characteristics, to have different thoughts on the same subject. What is said in one group or qualitative interview might never be repeated in a second group.” In the unlikely case that researchers want only to understand how particular participants express themselves in a particular (contrived) group, then the reliability is probably higher.

The validity of information gleaned from focus groups, while not studied directly, was probably quite low. The selection and grouping of participants, the prearranged setting, the existence of a facilitator and other observers, the direct and unrelenting attention to a particular topic — the context was so contrived that it is unclear why focus groups were a widespread method, especially since authors did not justify their use. Focus groups cannot be assumed to replicate ordinary conversations, to elicit sincere opinions, or even to produce a widely shared stereotype of expected behavior, although this latter result is likely to have greater validity than the first two. For most purposes, a series of individual interviews would be preferable to a focus-group discussion, especially considering the sensitivity of sexual topics.

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Suggestions for future research

Unanswered questions
Many important aspects of the central question — why do people use or not use condoms — remain unanswered. Also important but almost entirely unaddressed is the closely related question of how people use condoms and what adjustments they make, if any, when not using condoms. The following questions remain unanswered for most or all social groups, locations, and contexts involving them. Other pertinent questions, or perhaps better formulations of the following questions, would almost certainly arise in the course of participant-observation.

The most important questions left unanswered are:

- Why do some people use condoms in a particular context in which others, who seem very similar, do not?
- Why do individuals use condoms in one context but not another?
- Why have individuals changed their patterns of condom use?

Other key questions, many of which are subordinate to the three above, include:

Methodological
- Do the terms used in the research reviewed here accurately reflect the experience of local people? (casual partner, sex, etc.)
- What are the most appropriate spatial, generational, spiritual, political, economic, ethnic, and other groupings for pursuing these questions?
- In what ways have research participants become more or less willing to answer candidly over time?
- Does living in an area where a large-scale, long-term study is taking place affect people’s participation in research and sexual behavior?

Processual
- How do people negotiate their sexual encounters?
- What influences, within a given situation, have the most importance?
- How explicitly do people who are about to have sex consider condom-use while in different situations?
- How does using a condom affect people’s commitment to use them in the future?
- Does a commitment to using condoms alter the number of partners, episodes of sex, or types of sexual acts?
- When not using condoms, are people more likely to have non-penetrative sex? Anal sex? Are men more likely to withdraw before orgasm?
- What is people’s ideology regarding risk, pleasure, and responsibility?
- To what extent does the model of bride-price shape all sorts of sexual relations?
- What is the physical experience of men as opposed to women when using condoms?
- Are penis size and shape and/or vaginal size and shape correlated with sexual pleasure using condoms?
• How do people use condoms, in detail? Lubrication? Breakage? Vaginal preparations? Do people discard condoms in frustration during sex but continue with the act, now with abrasions?
• Why does it seem that more men than women are resistant to condom-use?
• To what extent are patterns of condom-use a symptom of economic relations?
• What do ssengas and other traditional experts say about condom-use?
• Can psychological orientations be imparted? How much do they change as a person is involved in different contexts?
• Do some people take pleasure in doing dangerous things?
• How and among whom has the spread of ART and male circumcision and the reduction of prevalence changed behaviors?
• How do developmental differences, especially between adolescents and adults, figure into different behaviors?
  o For example, adolescents often take more risks than adults, perhaps due to differences in neural development.
• What is the infection rate for people using condoms?
• How are biomedical and public-health messages transmitted and received, including the affect of the receiver?
  o How much prestige do they have, compared to other sources, such as religious leaders?
  o Who can be trusted to implement a pro-condom intervention without undermining it?
• Given the varying levels of education, childhood disease, and malnutrition, how able are different people to understand public-health messages?
• How do demographic changes — including the numerical dominance of youth, urbanization, and falling birthrates — affect the answers to these questions?
• How do stereotypes of safe and risky sexual partners develop?
• How does popular culture, including mass-media entertainment, influence condom-use and, more generally, gendered expectations of behavior?

**Better methods**

No methodology can perfectly address the reasons for condom-use, but some methods have a better balance of advantages and disadvantages than others. Certain principles for achieving more-valid responses can be gleaned from the literature reviewed here; researchers should:

• have extended, direct involvement with the research subjects
• be able to set aside judgmental attitudes during research activities
• not have a professional stake in the interventions being studied or planned
• be willing and able to engage in diverse research activities that typically are associated with more than one discipline

These researchers might conduct surveys or interviews as is currently common, along with employing novel techniques for eliciting information, such as drawing models of disease within the body. However, the basis of their greater success would be the categorically different approach
of long-term participant-observation – the ‘gold standard’ for understanding influences and processes. This immersive method involves participating in and observing everyday interactions and discussions (rather than simply asking about them), learning not only about but from local people, earning their trust so that more of them will answer more candidly over time, and understanding how to make measures more appropriate to local conditions. Inevitably, some of these ethnographers would gain a deeper understanding of condom-use as sexually active, temporary members of the community.

There are two main reasons for employing participant-observers as primary researchers. First, their immersion will allow them to better perform the relatively structured tasks that currently dominate studies of condom-use in this region. Second, they will undertake vital tasks for which other techniques cannot substitute. Most of all, ethnographers see and experience daily life as it unfolds, so they are well-positioned to determine whether a certain type of person will do behavior X in one context versus another and then to discuss this with locals to understand the nuances determining such differences. The distance between the central concern — condom-use and reasons for it — and the researcher’s involvement will be minimized; thus, the data will be better.

But, regardless of who is performing the research and no matter the conditions, better research will include sustained and fulsome attention to:

- psychological orientations, such as self-efficacy and sexual caution
- local models of biology, disease, and treatment
- common modes of communication regarding sexuality
- ideologies of risk and responsibility
- points of change, especially:
  - what happened to cause an individual’s long-term change in behavior, such as from never using condoms to always using them
  - what prompts someone to use condoms in one situation and not another

This focus on points of change is absolutely vital both to gain an understanding of behavioral change and to design better interventions.

Finally, the literature contains several creative techniques for eliciting information that go beyond simple interviews or focus groups. These include: analyzing the questions that people ask a biomedical expert, asking people to draw disease in a body, studying youths’ ideas for film projects, asking individuals to reenact their most recent sexual encounter or at least to recount it, and others. Their relative utility is unknown — especially for condom-use — but deserves exploration, which long-term ethnographers would have the opportunity to do.

As described in the introduction, academic anthropologists typically spend one or more years living among the people they study. They observe, participate in, and discuss actual interactions, rather than limit themselves to gathering stereotypical behavioral ‘scripts’ or creating false social

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8 Only someone who has done such lengthy research is likely to realize how much remains to be understood after even a year of full-time attention. Indeed, some respected anthropologists have claimed that they required a decade or more to truly understand their research subjects.
situations, such as focus-group discussions. An example subtopic would be to track both the discourse of traditional sexual experts, religious figures, and local biomedical personnel and the reactions of local people. Another advantage of employing well-trained academic researchers is that they will cite other relevant academic research, thus providing a sort of indirect monitoring of developments within the same region or topic.

**Logistics**
The history of the discipline provides a couple of methods by which numerous anthropologists have been recruited for similar purposes:

- opening a competition for doctoral students or post-doctoral researchers to apply for funding to dedicate themselves to this project, in locations determined by the funder
- identifying academic ethnographers who already are doing fieldwork in the area and offering them additional funding to report on these issues.

Ethnographers should be given a list of questions to answer and, when applicable, methods to use (or at least to consider using).

Because academic anthropologists live in circumstances that are similar to those of their subjects, such research actually can be quite economical.

**A quicker, less-effective alternative**
Plummer et al. (2004) described an alternative that would produce faster results, albeit of lower quality and uncertain continuity and requiring greater oversight. They employed graduate researchers and secondary-school graduates as participant-observers, living with local families in rural Tanzania for seven weeks. The results for describing behavior were impressive, but, given these junior researchers’ level of training, their ability to provide high-quality explanations of behavior and to pursue unanticipated opportunities for research is dubious. Years of training as an ethnographer make a significant difference, especially since most ethnographic research occurs during the flow of everyday activities and thus requires on-the-spot decision-making and is not amenable to post-hoc remediation.

**Quantitative indicators**
If exigencies require the application of a quantifiable survey across diverse contexts, then the most promising additions are:

- Post-hoc coding of recordings of open-ended discussions – that is, the coding would not use pre-defined categories. This is a common technique in the qualitative research reviewed in this report. These discussions would include:
  - Direct, open-ended, exploratory questions about when, why, and how respondents use condoms (not limiting interest to pre-defined types of partner)
    - In any case, the indicator should be *effective* condom-use, rather than simply use.
  - Open-ended discussions regarding respondents’ models of HIV transmission and development, including spiritual causes behind the biological one
- Open-ended, exploratory questions regarding communication about gender relations, health, and sexual practices
  - From whom do they learn about these issues?
  - Whom do they believe most fully?
- Tests of psychological dispositions, such as:
  - sexual caution
  - boldness
  - future-orientation
  - hope
  - fatalism
  - sense of imminent dangers
  - self-control
  - egocentrism

**Monitoring changes**
The research described above could establish a ‘baseline’ of information regarding condom-use in particular contexts. But patterns change over time, and understanding can deepen. Thus, monitoring influences on condom use is important. Various methods can be employed for this purpose. Each has strengths and weaknesses; combined, they should provide a very full understanding of the motivations and constraints that people face.

**Shorter participant-observation**
Already possessing a strong base in a locale, the same long-term ethnographers described above could return periodically for shorter terms to monitor changes. In addition to the less-formal techniques central to participant-observation, these ethnographers could be required to apply short questionnaires or other instruments to monitor, for example, changes in psychological dispositions or fears of side-effects from condom-use. Moreover, these follow-up field stays could provide an efficient opportunity to test innovative research methods.

**Other mechanisms**
The following methods for monitoring issues related to condom-use either replicate or are similar to techniques that many ethnographers employ, in addition to the main tasks of participant-observation.

**Local reporters**
College students could be enlisted, through their instructors, to fulfill course requirements by conducting brief research on related topics in their home areas.  

**News reports**
Researchers can monitor articles from the printed copies or online versions of newspapers to understand the content and prevalence of messages circulating in public discourse. Aside from obvious information such as governmental pronouncements and reports from NGOs, this tactic has yielded, for example, the insult “political condom,” which is one indication of condoms’ negative image. Columnists sometimes comment on related issues in ways that do not appear in research.

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9 I benefited from this approach in my research on transportation in Indonesia.
For example, one writer recounted overhearing young women at a trendy cafe who spoke as if sex with circumcised men were a high-prestige fad. Another claimed that “emancipated” women in Kampala are returning to labial elongation and wanting assertive male partners.\(^{10}\) The inclusion of readers’ comments, and others’ replies to these, greatly enriches this type of source. Cultural and especially linguistic anthropologists are adept at this type of analysis and need only a familiarity with the region and an Internet connection.

**Social media and entertainment**

Social-science researchers can monitor messages on social media such as Facebook, on which posters and commenters can be identified.

Perhaps more important are messages in popular entertainment. Indeed, considerable research has shown the power of soap operas and advertisements to shape people’s expectations and behavior. The literature review included several reports regarding “entertainment-education” productions and social marketing that were designed to promote condom-use (Hattori et al. 2010, Vaughan et al. 2000, Beneo 2010, and Van Rossem and Meekers 2007). Methodological problems and inconsistent results diminished the power of these promising reports, but they merit further exploration.

The larger point is that entertainment always educates people to regard the world in a certain way, and researchers should evaluate the effects of messages that are not part of public-health interventions, too. For example, music videos (or simply lyrics) constitute a promising but understudied object of analysis, especially in influencing youth, who dominate this region demographically. When performing such studies, it is important to not simply analyze the content but to understand who consumes the entertainment and, optimally, how they interpret it.\(^{11}\)

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\(^{11}\) In Indonesia, where many people watch television in public, I conducted occasional surveys, noting who was watching which program at what time.
Actionable programmatic recommendations

From the reviewing of literature regarding this topic, it is clear that a large number of people in the five target countries use condoms sometimes, but it is also clear that a large percentage of sexual interactions do not include condoms. Many reasons explaining their use and non-use have been identified, but, for most contexts, the ways that such influences shape the individual encounters that produce the statistical patterns are not known in a fashion that can lead to confident public-health planning. This calls for new approaches.

Among the major recommendations springing from this review are:

- Make long-term participant-observation the default method of research, supplemented by locally appropriate versions of the currently prevalent methods.
- Focus on explaining diversity rather than identifying dominant tendencies.
- Ask people directly to identify the reasons for their behavior in particular situations, rather than searching for statistical associations that hide important differences.
- Document the detailed process of sexual encounters.
- Identify and analyze the points of change in people’s behavior.
- If performing statistical analyses, choose data generation and statistical measures based on the question being asked and on the unadulterated type of data, rather than making the data-generation and analysis conform to a redefined, one-size-fits-all standard – that is, relative risk.
- Calculate and report measures – including to participants – that they expect, such as absolute numbers of infections avoided and percentage reduction of incidence.
- Critically appraise the conclusions of other researchers by delving into the details of their analyses and especially questioning any analysis based on self-reports of sexual behavior in standardized interviews.
- In formal interviews, forego the use of focus-group discussions and instead use maximally confidential, individualized approaches to formal interviews – perhaps using computers for prompting and recording.
- Collect biomarkers when possible.
- Explore more thoroughly the effects of
  - entertainment-education
  - the “culturally adapted 18-session behavioral intervention based on cognitive behavior therapy” reported in Lightfoot (2007)
- Trace the development and effects of various psychological dispositions mentioned in the literature.
- Analyze the effect of increasingly widespread ART on condom-use, which is completely missing from the systematic review of research literature. Yet in Kampala it is exceedingly common for people to say that no one fears HIV anymore because of ART and that this lack of fear explains the presumably reduced use of condoms and the rise in HIV prevalence. It is possible that the spread of ART has had this effect, but it seems impossible that this has occurred among all Ugandans. A similar question exists for the effects of male circumcision. Thus, this is one of the most pressing topics for future research.
- Analyze the ways that people use condoms, rather than simply their claims to use them.
Checklist of questions for context-sensitive research
To improve the sensitivity of research to context and to differences among research subjects, researchers should address the following questions, which can be adapted to related topics:

**Methodological**
- Do the terms used in your research accurately reflect the experience of local people?
- What are the most appropriate spatial, generational, spiritual, political, economic, ethnic, and other groupings for pursuing these questions?
- In what ways have different research participants become more or less willing to answer candidly over time?

**Processual**
- Why do some people use condoms in a particular context in which others, who seem very similar, do not?
- Why do individuals use condoms in one context but not another?
- Why have individuals changed their patterns of condom use?
- How do people negotiate their sexual encounters?
  - What influences, within a given situation, have most importance in determining sexual practices?
  - How explicitly do people who are about to have sex consider condom-use?
  - When not using condoms, do people change their sexual practices?
- How do people use condoms, in detail?
  - Lubrication? Breakage? Do people discard condoms in frustration during sex?
  - What is the physical experience of men as opposed to women?
- Does a commitment to using condoms alter the number of partners, episodes of sex, or types of sexual acts? Why?
- How does using a condom once affect people’s commitment to use them in the future?
- Aside from the intervention or variable you are studying, what other forces are influencing condom-use?
  - To what extent are patterns of condom-use a symptom of economic relations?
  - How have different people changed their behaviors due to the spread of ART and the reduction of incidence or prevalence?
- What is the ideology of research subjects regarding risk, pleasure, and responsibility?
  - Do some people take pleasure in doing dangerous things?
  - To what extent does the model of bride-price shape all sorts of sexual relations?
- What do traditional experts say about condom-use?
- Can psychological orientations be imparted? How much do they change as a person is involved in different contexts?
- How do developmental differences, especially between adolescents and adults, figure into different behaviors?
- How are biomedical and public-health messages transmitted and received, including the emotional experience of the receiver?
**Critical matrix**

A critical matrix comparing current and recommended assumptions, objectives, practices/interventions and indicators for increasing condom-use from a post-structuralist anthropological perspective

<table>
<thead>
<tr>
<th>Current</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assumptions</strong></td>
<td><strong>Assumptions</strong></td>
</tr>
<tr>
<td>• All condom-use is equally effective.</td>
<td>• Each use of condoms is unique, including its effectiveness.</td>
</tr>
<tr>
<td>• Condom-use is consciously decided.</td>
<td>• Condom-use might not be consciously decided.</td>
</tr>
<tr>
<td>• Objections to condom-use should be dispelled rather than investigated.</td>
<td>• Local understandings of condoms’ weaknesses deserve exploration.</td>
</tr>
<tr>
<td>• All people are able to understand biomedical information and advice.</td>
<td>• People who appear to understand biomedical information and advice might have different understandings, for various reasons.</td>
</tr>
<tr>
<td>• Universal, quantitative analyses are superior, especially using relative-risk.</td>
<td>• Direct participation and observation is key to explaining behavior.</td>
</tr>
<tr>
<td>• Individuals remain the same across contexts.</td>
<td>• Unique local models shape action.</td>
</tr>
<tr>
<td>• For analytical purposes, people are the combination of discrete properties.</td>
<td>• People change significantly according to context.</td>
</tr>
<tr>
<td>• Lessons from other times, places, and people are applicable.</td>
<td>• People face and embody an inseparable mix of influences.</td>
</tr>
<tr>
<td>• Survey data regarding condom-use is sufficiently reliable.</td>
<td>• Survey data regarding condom-use is insufficiently reliable.</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td><strong>Objectives</strong></td>
</tr>
<tr>
<td>To measure and explain condom-use in universal terms institutionalized in public-health discourse.</td>
<td>To gauge and explain condom-use in the most precise and accurate terms possible, before translating this for consumption by public-health professionals.</td>
</tr>
<tr>
<td><strong>Practices</strong></td>
<td><strong>Practices</strong></td>
</tr>
<tr>
<td>• Standardized questionnaires with limited responses</td>
<td>• Extended participant-observation</td>
</tr>
<tr>
<td>• Open-ended personal interviews</td>
<td>• Standardized questionnaires informed by participant-observation</td>
</tr>
<tr>
<td>• Focus-group discussions</td>
<td>• Open-ended personal interviews</td>
</tr>
<tr>
<td><strong>Interventions</strong></td>
<td><strong>Interventions</strong></td>
</tr>
<tr>
<td>• Education-entertainment (soap operas)</td>
<td>Depends on results of research in different locales, but hypothesize:</td>
</tr>
<tr>
<td>• ART</td>
<td>• Same list as Current</td>
</tr>
<tr>
<td>• VCT</td>
<td>• Soap operas and music videos to:</td>
</tr>
</tbody>
</table>
| Indicators | • Condom-use at most-recent sex  
  ○ yes/no  
  • Condom-use over previous months  
  ○ always/sometimes/never  
  ○ casual partner/long-term partner  
  • Non-standardized, contingent list of factors, including:  
    ○ receiving ART  
    ○ exposed to education-entertainment  
    ○ discordant couple in VCT intervention  
    ○ streetwalking sex worker  
    ○ psychological dispositions, such as sexual caution, boldness, future-orientation, fatalism |
| --- | --- |
|  | • eroticize image of condom-use  
  ○ model desired behavior in relatively risky contexts  
  • Role-playing to practice desired behavior in relatively risky contexts  
  • Improvements to condoms to increase the wearer’s physical pleasure and decrease his partner’s discomfort  
  • Distribution of water-based lubricant  
  • Improvements to biomedical communication, to make it more similar to communication in other contexts  
  • Involvement of traditional healers and sexual experts in promoting condoms |
|  | • Same as Current, except qualifying condom-use as “effective”  
  • The coded results – using codes developed after performing the interviews – of:  
    ○ Direct, open-ended, exploratory questions about when and why respondents use condoms (not limiting interest to pre-defined types of partner)  
    ○ Open-ended discussions regarding respondents’ models of HIV transmission and development, including spiritual causes behind the biological one  
    ○ Open-ended, exploratory questions regarding communication about gender relations, health, and sexual practices |
Limitations

This review suffers from several limitations. For example, it depends on a body of research with significant topical and methodological lacunae; a glaring example is the paucity of articles about Rwandans. And a significant portion of the research reviewed did not focus on reasons for condom-use but merely included condom-use as part of a project centered on some other question. Considering research focused on other countries in sub-Saharan Africa might have yielded different results.

The broad nature of this review has made its conclusions necessarily general and its perspectives relatively difficult to apply to any specific project. Because this review is not preparatory to any specific work, research has been compared across different times, places, groups, methodologies, and purposes. In addressing such a diversity of research and potential applications, the comments are perhaps a bit more scattershot and abstract than would be ideal, requiring a process of translation into practical use.

Finally, it is a shame that the search strategy did not yield any directly applicable paragon of research on reasons for or against condom-use among a broad group of people, aimed at improving public-health interventions. As partial remediation, I have offered the example of Nichter (2001) on antibiotic use; several of the qualitative studies also contain elements worthy of emulation.
Concluding comment

I would like to add brief comments that did not fit within the terms of the previous sections.

Other activities
Personal contact
I broached my research with a variety of public-health experts both formally and informally – in the latter case, much as I would if I were pursuing ethnographic fieldwork. Only one expert working in sub-Saharan Africa had any sources to recommend, and most of these were not germane; however, a couple of these articles are included in the review. Most of the other experts did one or more of the following:

- did not express interest
- asked me what I had found
- said that this was an important question, for which there still was no answer, despite years of work on HIV
- suggested, with varying degrees of commitment but no support beyond hearsay, that Ugandans (at least) had stopped using condoms because, with ART and less-visible suffering, they no longer feared HIV. Some added that public figures and institutions no longer focused on HIV-prevention as before.

One well-regarded medical anthropologist in the United States shared his own article on a related question (Nichter 2001), and another did not respond to my query, although we remain in contact for other purposes.

Most Ugandan non-experts did not express interest openly, but some did appear to listen attentively as I discussed this research with other ex-patriates. Ex-patriates responded much in the same way as the public-health experts, although one man did admit to having interest as a sexually active resident.

One Ugandan man, a newspaper columnist about fifty years old, exemplified the sort of respondent upon whom ethnographical fieldwork depends. He suggested that the violent upheaval of the preceding decades had fostered among Ugandans a desire to maximize short-term satisfaction because of their uncertainty that they would live much longer. The recent years of stability, he said, had perhaps not eradicated this mentality of seizing the day. Thus, they did not use condoms. Nonetheless, he implied that he used condoms and that this was out of a desire for “control.” Rather than wanting to control his sexual partners, as this issue usually appears in the literature, he wanted to have control over with whom he would have children.

Neither of the issues that he raised appeared in the literature that I reviewed, but both deserve further exploration, to assess how common they are. If I were engaged in participant-observation, I would informally present this man’s ideas to other locals, to see how they would respond.

News articles
The Google alert for mentions of condoms and the five countries yielded practically no articles, for unknown reasons.
But my regular perusal of the websites of three Ugandan news sources (*New Vision, Daily Monitor, and Observer*) and occasional browsing of others did yield several articles that directly bore on condom-use. In part because news organizations highlight novelty, but also because news sites are quite open to different topics and sources of information, they revealed a diversity of experience not found in the formal academic literature. This included: alarm about condom shortages, rental of used condoms (!), theft of condom supplies and repackaging in other countries for sale, extended interviews with sex workers, strong desire among Maasai men for condoms but social and geographic obstacles (despite claims in the research literature that Maasai reject condoms), misinterpretation of basic statistics by government health-officials, and considerably more. The comments by readers were often as valuable as the story – not only for the explicit content but for the assumptions about gender relations and sexuality that they revealed.

In short, any effort to monitor condom-use in this region should include a systematic survey of news sources. These sources should include, foremost, the most popular news-sites (not necessarily the most responsible ones) among the people being studied, especially if these sites include readers’ comments. Popular printed sources that do not have associated websites probably provide unique and important information; for example, my understanding is that newspapers in Luganda print sexual advice from ssengas that cannot be found in English-language sources. Discussions with locals about their reactions to these stories would yield further riches.

News and discussions on radio and television require a great amount of labor to survey adequately and then to transcribe and analyze. It is my experience that, unless a regular program focuses consistently on sexuality, monitoring such sources would be prohibitively inefficient.

*The most widespread reasons*

I have misgivings about compiling such a list, but, after reviewing so many sources, my intuition is that four issues are most widespread when sexual partners who can access condoms choose to not use them:

- diminished physical, emotional, and even spiritual satisfaction when using condoms
- desire to reproduce
- association of condoms with distrust and casual relations (and thus they are seen as alien to marriage)
- a general, inchoate, negative impression of condoms

The most widespread reasons for using condoms are less apparent. It makes sense that they might be:

- desire to not reproduce
- fear of HIV infection – which deserves much more attention from researchers
- an inchoate sense that it is popular, otherwise socially expected, or morally right

But this impression is weaker than my intuition regarding reasons to not use condoms. In either case, research is needed to understand how these and other complex, contradictory influences result in a particular pattern of behavior.
An unexplored concern
Diminished cognitive development is a much-cited effect of childhood hunger and disease, common in some areas and economic strata of these five countries. In addition, erratic and poorly conducted schooling can also affect people’s intellectual development. Is it possible that these types of difference have reduced some people’s understanding of and commitment to biomedical explanations and advice, thus leading to further disease? This is an uncomfortable topic to raise, but, given the use of non-intuitive terms such as “risk,” I feel that it deserves consideration.

Recommendations for promoting condoms
Finally, it is entirely possible, as some researchers have argued or implied, that the most effective changes in promoting safer sex will come indirectly through: greater gender equality, economic progress, the demographic transition, generational changes already underway, or widespread ART. But, examining the issue with a tight focus on condoms, my background doing research on behavioral changes has led me to draw up a list of recommendations to increase people’s desire to use condoms:

- Make condoms’ image sexy, not medical (Thomsen et al. 2004)
- Make them feel better physically
  - as the Gates Foundation is attempting to do through a competition
  - at least ensure that different sizes and water-based lubrication (in addition to the lubrication in the package) are available
- Make them non-prophylactic
  - Because this is probably impossible, the chances of increasing condom-use to near-universal levels, as in Japan, are slim, unless the strong desire and pressure to reproduce are greatly reduced.
Appendices
Detailed review of literature

Quantitative analyses

In general, the quantitative studies included in this review either test the effect of a public-health intervention or search for correlates of condom use. In both cases, few studies directly address the question of why a particular intervention or social attribute leads some people to use condoms, even by inference.

Unfortunately, almost no studies were appropriate for meta-analysis. Interventions that belong in the same general category, such as VCT, often had markedly different features — for example, they may have been for couples or for individuals. Others mixed separate interventions in unique ways, making it impossible to combine each component with similar interventions in a meta-analysis. This is particularly true of free and easy condom-distribution, which was a common feature of interventions but not conducted in isolation in any study. Likewise, the design and implementation of the evaluations often differed in ways that make their results unfit for combination. Thus this report presents the results in narrative form, with a meta-analysis of only two studies of circumcision.

Studies not assessing public-health interventions

Quantitative studies that do not evaluate the effects of public-health interventions on condom-use most often base their search for correlates of condom-use on large-scale surveys, such as those produced by MEASURE DHS. They then perform multivariate analyses, describing the models in varying detail – but rarely enough to judge the results and never enough to replicate them.

These studies have several weaknesses. First, they generally accept survey data uncritically. In addition, the authors often cast correlates of condom-use as causes, or “determinants,” even when they are descriptive characteristics such as rural residence. Further, they rarely tie trends to information outside of the survey, such as political changes or major public-health initiatives. And their analyses typically are at the country level, without exploring divergent trends among, for example, regions and ethnic groups.

Adair (2008) fit the description above, in searching for “determinants” of men’s condom-use in their most-recent sex outside of cohabitation or marriage in five African countries, including Kenya, Tanzania, and Zambia. Using two iterations of DHS surveys, he found that two main factors were associated with condom-use: level of education and the knowledge of condoms’ effectiveness, the latter being something public-health programs can address. But Adair did not sufficiently acknowledge or, thus, explain why middle-income men used condoms more than lower- or higher-income men. The same non-linear pattern applied to education.

The analysis generated some surprises: condom-use was not correlated with donors supplying them; knowing a person with HIV or who had died of AIDS did not significantly increase condom-use; and formerly married men were very unlikely to wear a condom in Kenya and Tanzania but were most likely to do so in Zambia. These patterns cannot be explained without recourse to other sources of information.

Benefo (2010) used the 2003 Zambia Sexual Behaviour Survey to explore the extent to which community characteristics aided predictions of individual condom-use. The centerpiece was the comparison of the results from four Bayesian models, which increasingly included
Benefo’s preferred community measures. The models (3 and 4) with more community information did predict condom-use better than the one using only personal information. He then ran simulations to estimate the amount of influence that each independent variable apparently had. He found that “in addition to the personal characteristics of individuals and the development characteristics of their communities, community demographic and communication characteristics influence condom-use decisions.” Some of the indicators that he created for these latter determinants are questionable, as is their interpretation, but the broader point — that condom-use results from more than an interpersonal negotiation — is well-taken.

Benefo’s analysis included other statistically significant patterns. Exposure to entertainment-education programs, knowledge of condoms’ effectiveness, and seeing no obstacles to obtaining condoms were all correlated with use, whereas being married, using “modern” forms of contraception and agreeing that condom-use leads to promiscuity were correlated with non-use.

Silas (2013) used 2010 DHS data from Tanzania regarding individuals who reported having high-risk sex in the previous year. After calculating odds ratios for each variable in a multivariate analysis, he found that: For men, those aged 15-19 were significantly less likely to use condoms during their last high-risk sexual intercourse than those aged 40-49, those with no education were less likely than those with higher education, and, above all, use descended with wealth. For women, those in the lowest two quintiles of wealth, who were not mobile, and who lacked formal education were significantly less likely to have used condoms during their last high-risk intercourse. Women were more likely to use condoms if they were married or unemployed.

Silas nicely acknowledged that some people misreport their sexual activities on surveys but unconvincingly argued that this probably did not matter in this research since the result “reflects expectations.” Also, because of the nature of calculating odds ratios, the choice of reference-values for non-binary variables seems likely to have affected which results were significant; for example, it is unclear by what logic — except the hunt for significance — “formerly married” was used as the standard against which “never married” and “currently married” were compared. Nonetheless, the results linking higher wealth to higher condom use among men were impressive; explaining this relationship would be the next step.

Vinod et al. (2007) used DHS data from several African countries, including Kenya, Tanzania, and Uganda, to focus on this relationship between wealth and condom-use. Based on a bivariate analysis that did not include any indication of significance, the authors concluded that condom-use was “consistently” higher with higher wealth. But this generalization is an overstatement, as the relationship is monotonic only for ever using a condom but not for consistent condom use or for use with a non-regular partner. Nonetheless, the overall pattern is similar to the one Silas found in Zambia: wealthier people were more likely to report using condoms. The reasons are unknown.

Finally, in a departure from the studies described above, Ngugi et al. (2012) surveyed female sex workers and other women in the Kibera section of Nairobi. They did not take a representative sample but analyzed their data as if it were. They found that “having a romantic partner was significantly associated with reductions in total number of sexual partners overall and with sexual partners who did not use condoms. In contrast, HIV status, education, number of immediate family members and levels of alcohol consumption were non-significant factors.”
The researchers argued that having a boyfriend prompted female sex workers to reduce the number of clients and to demand condoms more often, because boyfriends helped them financially, making the women less dependent on clients. This reasoning was based on the common finding that sex workers received more money for not insisting on condoms and were unlikely to see condom-use as appropriate in a trusting relationship, as with a boyfriend.

However, other interpretations exist. The authors did not investigate whether sex workers with boyfriends had different personal attributes (for example, beauty or personality) from those without boyfriends. For example, it is possible that sex workers who were more likely to have fewer clients and to demand condom use were also more likely to attract or want boyfriends. Analysis is especially complicated since both groups earned about the same amount from sex work, despite the fewer partners and greater condom-use among those with boyfriends. The researchers apparently did not ask women directly about these issues.

Studies assessing public-health interventions

Some quantitative studies focus on interventions designed to directly promote condoms, whereas others evaluate condom-use as an indirect effect of an intervention aimed elsewhere, for example, circumcision. Most of these studies limit themselves to documenting trends in condom-use and make no effort to analyze the reasons for condom-use; rare exceptions test psychological dispositions, such as “self-efficacy.” Nonetheless, such studies can provide valuable clues for further research or, importantly, provide evidence that other HIV interventions have no significant effect on condom-use.

Studies evaluating direct condom-promotion

Condom-skills workshop

Kajubi et al. (2005) reported on the effects of a condom-skills workshop among young men in low-income areas of Kampala. The control group received free and easy access to condoms; the intervention group additionally received — or at least was invited to receive — a condom-skills workshop. The researchers did not find any significant difference in rates of condom use. The inclusion of ‘participants’ who didn’t participate in the intervention, the acceptance of highly dubious reporting of numbers of condoms used, and a suspicious pattern of statistical choices and omissions gives the impression that the researchers opposed the promotion of condom-use. In any case, they not only did not ask why subjects acted in the ways they did; they did not ask whether participants used condoms differently, in terms of technique, after receiving an intervention designed to improve this skill.

Finally, it is possible that talking about sex and graphically demonstrating sexual techniques to young people will inspire some of them, in the short run, to engage in sex more frequently — regardless of whether this discussion focuses on condoms.

Information about HIV and safer sex

A few studies — all in Uganda — assessed efforts to provide sexual-health information. In a well-done study, Jamison et al. (2013) found that an automated service to answer spontaneous questions via SMS had no effect on condom-use. Seen more globally, risky behaviors actually increased. As above, the author didn’t consider the possibility that talking about sex and receiving promotions regarding promoting a sex-related service had the effect of increasing some people’s desire to have sex.
Quigley et al. (2004) presented similar findings from a large-scale project in Masaka, where multiple types of informational interventions were open to the community throughout the year. They found that “reported condom use remained low at consecutive rounds in men and women, and reported usage was not significantly associated with attendance at [these] activities.”

Also in Uganda, this time in Kampala, Lightfoot et al. (2007) examined “a culturally adapted 18-session behavioral intervention based on cognitive behavior therapy” for youth living with HIV, compared to standard treatment for controls. The reported results were miraculous, as consistent condom-use leapt from 10 to 93 percent for the treatment arm at 3 months, while it declined from 15 to 12 percent for the control group (p < .05, N=50 for both groups). Unfortunately, this study — based on a convenience sample that was then randomly divided into treatment and control groups — did not specify the method of data collection, but it appears to have been performed by the nurses who administered the intervention. This, of course, increases the likelihood of bias. Beyond this, the researchers failed to explain the content of the intervention, and they did not ask about or give reasons that this intervention might be so successful. Nonetheless, given the level of reported success, further examination of this model is warranted.

Peer education

Three studies examined the success of school-based, peer-education interventions. Unfortunately, the quality of the quantitative portion of Maticka-Tyndale et al. (2004) disqualified it from consideration. Agha and Van Rossem (2004) reported, not surprisingly, that a single-session peer intervention in Zambian schools had no effect on condom-use. Denison et al. (2011) found that peer educators with more intensive and long-term involvement in Zambian schools also had no effect on condom-use. In short, there is no evidence to support school-based peer education to promote condom-use.

VCT

Voluntary counseling and testing is the subject of seven disparate studies. Arthur et al. (2007) examined the effects of VCT provided by government clinics in Kenya. Enrolling consecutive clients at one urban facility and two rural ones, without a control group, they found that rates of unprotected sex declined significantly but remained high. However, this overall progress masked a more ambivalent one: rates of condom-use with “primary” partners decreased significantly while condom-use with other partners increased significantly. Reasons for these trends were unexplored.

Matovu et al. (2006) questioned the effects of repeated VCT, compared to one session or none. They concluded, surprisingly, that in Rakai, Uganda, “repeat acceptors were significantly more likely to report inconsistent condom use compared to non-acceptors of VCT. This suggests that HIV-negative repeat VCT acceptors are at an increased risk of HIV infection.” In addition, participants who received one VCT session showed no significant advantage in either consistent or inconsistent condom-use over those who declined VCT.

Unfortunately, the authors analyzed condom-use as a dichotomous variable but had three potential values (none, inconsistent, consistent). People who repeatedly accepted VCT showed
significantly higher rates of consistent condom-use and of inconsistent use. That is, their claimed rates of condom-use overall were higher than those who refused VCT. But, guided by the statistical measure, the authors lament the greater rate of inconsistent users.

In any case, the reasons for the patterns reported are unknown. Was it because repeaters had a different psychological orientation? Did repeaters share experiences that led them both to be tested multiple times and to engage in riskier behavior? Was there something about the process of VCT itself? The authors did not ask these questions, although they did cite evidence from other studies that some people see repeated negative tests as a sign of their special luck or skill in choosing partners.

One such study is Matovu et al. (2005), which came from the same project in Rakai but did not focus on repeat recipients of VCT. Nonetheless, focus-group discussions ‘suggested’ that “HIV-negative repeat testers may assume they have been fortunate in their choice of partners, or believe themselves to be immune to HIV, and these misconceptions may lead to persistent risk behaviors.” (As above, condom-use was not significantly different among recipients and decliners of VCT.)

In a much-cited study, the Voluntary HIV-1 Counseling and Testing Efficacy Study Group (2000) found significantly greater reductions in unprotected sex for VCT recipients among: individual men and women with non-primary partners and for couples (or apparently just for men in the couples, oddly). Knowing that one was HIV+ also significantly reduced unprotected sex among women with their primary partners, among men with their non-primary partners, among discordant couples (although men & women report different rates), and perhaps in the short-term among women in couples with their non-primary partners. Unfortunately, these findings resulted from combining different studies in Kenya, Tanzania, and Trinidad and Tobago — without a justification for analyzing them as one. Further, the researchers did not address why VCT or the knowledge that one was HIV+ would lead some people but not others to change their use of condoms.

Two studies with significant methodological problems studied VCT among couples. Allen et al. (2003) examined reported condom-use among discordant and concordant couples after joint VCT and also tested for “sperm detected on vaginal smears, pregnancy, and sexually transmitted diseases,” as a way of checking the accuracy of participants’ reports. They found increases in reported condom-use among discordant couples compared to concordant-negative ones. Unfortunately, the extent of this pattern is unknown, due to the significant unreliability of responses, as measured by biological markers, which for technical reasons can capture only a subset of unprotected sex. Thus, the authors state: “The presence of sperm on vaginal smears was noted half as frequently in discordant couples compared with concordant negative couples … Sperm and other biological markers also indicated, however, that at least half of unprotected contacts in discordant couples were not reported.” An additional problem involves the formation of the comparison group of concordant couples. It appears that they were tested and interviewed only once, whereas the discordant couples returned for counseling every three months for a year. Thus, the most telling patterns would be reductions of in biological markers of unprotected sex among discordant couples over time, but the authors did not report these. It is reasonable to infer from their analysis that increases in reported condom-use reflected increases in actual condom-use, but the size and significance of this change is unknowable. Finally, Allen et al. do not address potential reasons for these potential effects.
Roth, Stewart et al. (2001) studied the effects of male-focused VCT in Rwanda and, like Allen et al., found it effective in increasing condom-use among discordant couples but not among concordant HIV-negative ones. However, no comparison group was created, so it is unclear whether it was the male-focused approach or VCT per se that made a difference. Moreover, the calculations were based on participants’ estimates of average sexual activity per month over the previous year, which is a highly dubious measure. Indeed, men and women from the same couples produced very different averages. Also, reasons for changes in condom-use were not addressed: Did the negative partner insist? Did the partners make a mutual commitment? Did the positive partner show loving care this way? And why did the HIV-concordant couples not change at all?

**Entertainment-education**

Two studies dealt with attempts to influence behavior through entertainment, such as soap operas. One was among the most useful large-scale quantitative projects reviewed.

Vaughan et al. (2000) provided an incredibly valuable example by demonstrating an effective intervention, tying it to reasons for this success, and linking these to possibly applicable theoretical frameworks. The researchers focused on the effects of a radio soap-opera in Tanzania that dramatized a variety of public-health messages, including HIV-prevention. Over five years, they interviewed randomly selected residents from areas that did and didn’t receive the show; once the control area did get the program, the researchers tracked changes there, too. The researchers found a significant increase in condom-use among listeners who had more than one partner. Moreover, they found statistically significant correlates of condom-use that help explain why particular individuals responded to the intervention differently from others. They are: knowledge of HIV, belief in condoms’ effectiveness against HIV, the perception that they are at risk of infection, and a self-efficacious orientation.

Unfortunately, this final attribute, self-efficacy, provides an excellent example of an inadequately measured psychological orientation. Respondents were judged self-efficacious on the basis of the answer to one, hypothetical question: “What would you do if a doctor told you that you had HIV/AIDS?” First, categorizing people’s orientation on the basis of a single question is a flimsy approach. Standard measures of self-efficacy contain at least eight questions; the answer to each question is scored along a range of four of more values, not as a simple binary distinction; and the respondent assigns this score – not the researcher. Second, the researchers seem to conflate self-efficacy with adherence to biomedical recommendations. The authors do not provide full information, but their examples strongly suggest that they interpretively coded respondents as self-efficacious if they answered in line with public-health messages. Apparently, those who responded differently – even in ways that reflected a belief that they could act effectively – were judged to be not self-efficacious. Thus, it is not surprising that the results are correlated with condom-use, but this is hardly an acceptable measure of self-efficacy. Instead, researchers might prompt respondents with a series of statement such as, “If I am diagnosed with HIV/AIDS, I will be able to adjust successfully”; respondents would then choose whether each statement describes them in one of five ways: very accurately, somewhat accurately, neither accurately nor inaccurately, inaccurately, or very inaccurately.

Until such research is performed, the danger is that other researchers might read Vaughan et al.’s summary statements without considering the details of this question and subsequently cite this study as an example showing that self-efficacy is key to condom-use. Instead, the study
showed that people who predicted that they would engage in biomedically approved practices if infected were more likely to report using condoms.

Nicely, the authors argued that their results were consistent with social cognitive theory and diffusion theory. Noting links of this type is important because such theories suggest relations between experience and behavior that other interventions might address.

Unfortunately, some aspects of the methodology did not match the quality of the search for explanations for patterns in the data. Most notably, some key questions were changed in the middle of the study, and the data for one year (1996) show oddly precipitous changes that the authors did not explain. As with many other studies, the researchers could not eliminate the possibility that listeners to the soap opera had learned socially desirable responses to the questionnaire and supplied them in contradiction to their behavior. Finally, the listeners were self-selecting, and it is possible that their reasons for (not) using condoms would differ from those among people who did not listen; that is, this intervention might not produce the same effect among other potential listeners.

In sum, Vaughan et al. (2000) provided many elements of a model approach to a quantitative study. In particular, they attempted to identify psychological attributes that accounted for differential responses to an intervention, and they compared these findings to broader theories. Unfortunately, the implementation of this design had some weaknesses that call their results into question.

Van Rossem and Meekers (2007) studied the combined, cumulative effects of nine social-marketing and entertainment-education programs about which the 2002-2003 Zambian DHS asked. Any level of exposure to these programs was significantly associated with men, but not women, using condoms during their most-recent sexual intercourse. The researchers also found that the desire to have children within the next two years was, not surprisingly, significantly and negatively associated with condom-use for both men and women. This is a common finding in qualitative studies, too.

Their results also suggested that a possible “cause” — risk perception — might in reality be more of an effect. Rather than a feeling of high risk motivating the use of condoms, men and women who used condoms at last intercourse were more likely to feel a lower risk of infection.

Unfortunately, the researchers did not sufficiently disaggregate the effects of different programs, take different levels of interest and exposure into account, or, as they acknowledged, investigate “which aspects of the program content or which specific messages actually affect condom use [or] the processes through which program exposure affects condom use.” A complete study would include observations of people listening to or watching the shows and discussing them, if they do so.

**Social-marketing campaigns**

Aside from the analysis of ads for condoms included in Van Rossem and Meekers (2007), two articles evaluated social-marketing campaigns.

Eloundou-Enyegue et al. (2004) assessed the effects of ads for the Salama brand of condoms among young men in Dar es Salaam, Tanzania. The study had many weaknesses, including using a convenience sample with no control or baseline, not reporting the significance of statistical measures, and, overall, attributing all changes in condom-use to exposure to this campaign. Reported condom-use increased precipitously over the four years covered, but these were the years 1993-1996, when many other influences would be ramping up. Also, in research
regarding young people, changes in sexual behavior have to be analyzed in light of their changing physiologies, cognitive and emotional development, economic resources, and social expectations, which the authors did only incompletely.

Despite these weaknesses, Eloundou-Enyegue et al.’s main methodology deserves further consideration. They conducted “retrospective event-histories.” This was meant to discover moments of transition in respondents’ habitual practices, for example when they changed from not using condoms to using them. The researchers found that such changes tend to “endure.” While the way that they employed and interpreted their data has considerable problems, this method and question deserve more attention. The researchers, unfortunately, asked their respondents to characterize their sexual activities and exposure to specific ads in newspapers for each quarter-year over the past four years. This almost certainly yielded unreliable timing of events. But perhaps the sequence of events — especially those involving important transitions — was more reliable. A study employing this methodology should also — unlike these authors — ask participants why they changed. Since the goal of many interventions is to change behavior, it makes sense to focus on the moments when other people actually have made the desired change.

Hattori et al. (2010) provided a tantalizing analysis of a media campaign to reduce trust in sexual partners in four African countries, including Uganda and Zambia. The project was developed differently in each country, so the analysis was also by country. The researchers applied a baseline survey and a follow-up to randomly selected young adults; unfortunately, the social characteristics of these two groups differed significantly in Uganda.

This study has value for several reasons. One is that it provided an example of problems with generalizing across different geographic areas: no variable was consistently and significantly associated with greater condom-use. For example, exposure to the media campaign was correlated with condom-use in only one of the countries (Mozambique). Higher education was associated with condom-use in Zambia and Uganda, but not in the other two countries; no reason for this link or difference was provided.

More positively, this research identified a psychological disposition — a potential “reason” — that is significantly associated with condom-use: sexual caution. However, while sexual caution was associated with condom-use elsewhere, it was significantly correlated with reduced condom-use in Lesotho. (In the abstract, the authors erroneously claimed that it was positively associated in all four countries.) This raises two important questions, as with the discussion of self-efficacy above: what is ‘sexual caution,’ and how well did the researchers measure it? Sexual caution is the feeling that one is at risk of infection and solely responsible for protecting against it. The researchers asked six dichotomous questions to measure sexual caution, and these might provide accurate and reliable results. But other researchers should keep in mind that the significant correlation computed was with these particular questions, taken as a group.

Perhaps the most basic question regarding these contradictory findings is that of causation. It is quite possible that sexual caution did not drive condom-use as much as the context of condom-(non)use engendered feelings of sexual caution – or a complex mix of the two that varied among different people.

MEMA kwa Vijana

MEMA kwa Vijana is a large-scale, multi-pronged program to improve adolescents’ sexual health in ten rural communities in Mwanza, Tanzania. Phase 1, which ran 1998-2002, was the subject of seven articles discussed in this report. The evaluation was as multi-faceted as the
intervention, and this section contains the quantitative results and qualitative commentaries on them.

The intervention included school-based lessons and tests, condom social-marketing and distribution, the training of health workers to provide services to youth in a sensitive manner, and occasional youth-focused health-events in the communities (Ross et al. 2007). These treatment communities were compared to ten control communities.

The initial evaluation included two types of questionnaire, tests of knowledge, individual interviews, ethnographic fieldwork, and biological markers of sexual activity, such as pregnancy or new STIs. A second evaluation was conducted in 2008 (Long-term Evaluation ... 2008), in case the initial assessment had taken place before the interventions had had time to make a difference in participants’ behavior. Two findings stood out: 1) the project’s demonstrated success in increasing adolescents’ knowledge about sexual health did not lead to significantly greater condom-use, and 2) a devastatingly high percentage of participants responded in an unreliable fashion.

Plummer et al. (2004) provided perhaps the most valuable methodological evaluation in this review. They compared the results from the various types of evaluation that were employed and found that participant-observation and biological markers provided the most accurate information. Indeed, the questionnaires included large percentages (32 percent) of inconsistent answers. This percentage increased to 40 percent when answers were checked against those (relatively few) with biological markers of sexual activity. (Consistent-but-inaccurate answers could not be detected, so the actual percentage of inaccuracies was almost certainly higher.) Face-to-face interviews were more reliable than surveys, although this was mostly because pregnant females, whose pregnancy might have been showing, acknowledged sexual activity at a higher rate than others. Participant observation, which collected quantifiable reports of sexual activity only opportunistically, revealed much more sexual activity, its motivations, and its context, and these reports matched biological markers well. Some informants also revealed to ethnographic fieldworkers the reasons that they lied on the questionnaires.

While it would be easy to dismiss these problems as peculiar to working with adolescents, other studies that used biological markers among full-fledged adults have produced similar discrepancies (Allen et al. 2003, Feldblum et al. 2001). The cumulative effect is to call into question the use of surveys to measure sexual practices in this region. Oddly, the long-term assessment (Doyle et al. 2010) was again survey-based, and again biological markers told a different story from participants’ responses: no significant difference between recipients of the intervention and the controls.

Using qualitative information, Wight et al. (2012) suggested locally relevant reasons for the intervention’s lack of effect on condom-use. These might not apply in other cultural milieux. They include:

- Transactional sex as a norm — not just for survival — discourages condom use.
- Fatalism
- The lengthy time between infection and symptoms reduced the sense of danger
- Participants’ social distance from those perceived to be likely carriers of HIV
- The misidentification of AIDS as other illnesses
- Rural pupils had very low literacy, very limited knowledge of biology, and received little encouragement to think critically.

Another possible reason for not using condoms might be extrapolated from Wight et al.’s analysis:
• Impotence was considered humiliating, so condoms, which reduce sensation, represented a danger.

Finally, the authors suggest, without elaboration, that “the small minority of youth with strong educational ambitions were more averse to sexual risk, perhaps because they were more future-oriented.” Given the prominence of fatalism and pessimism in explanations of sexual risk-taking, a future-oriented disposition seems plausible as motivating condom-use and deserves more attention from researchers.

*Introduced female condoms*

The central question regarding the introduction of female condoms is whether this would increase condom-use overall. Three studies examined this topic, with none unequivocally and convincingly showing an overall increase in condom-use.

Feldblum et al. (2001) provided another example of self-reports belied by biological markers. At six coffee, tea, and flower plantations in Kenya, sexually active females who did not want to get pregnant received male and female condoms; members of the control groups at matched plantations received only male condoms. Infection rates went down similarly in both treatment and control groups, so the provision of female condoms did not increase protection, despite a difference in self-reported use (significance not reported).

Reasons for eschewing female condoms included:

• “Partner objection” (largest percentage)
• Mutually faithful relations, which were perceived to be incompatible with condom-use
• Negative attitudes of health-care providers who helped to implement the project
• Rumors about condoms’ ineffectiveness and dangers and against the project itself

Jones et al. (2006) evaluated the benefits of three sessions of group counseling compared to a single session of individual counseling in the provision of female condoms to sexually active, HIV+ women in Lusaka, Zambia. At twelve months, the recipients of individual counseling reported higher usage of male and female condoms, but the differences were not significant. More importantly, the authors reported that the increase in female-condom use for the two arms combined was significant. However, a subsequent table labeled “Sexual behavior: Entire Sample” showed “Consistent condom use” — referring to both male and female condoms — declining from 54 percent at baseline to 33 percent at 12 months. Unfortunately, further statistics were not computed, including the significance. In sum, this article did not show that promoting the use of female-condoms increased protection; possibly it lessened it. No reasons are given for any of these changes.

Thomsen et al. (2006) studied the promotion of female condoms among female sex workers in Mombasa, Kenya. The sex workers were recruited non-randomly through an existing peer-education program and then trained by peer sex-workers to use female condoms. Participants were interviewed every two months for a year, and the female condoms were introduced only after the third interview. Condom-use had already risen by 6 percent by this point, and it rose only another 5.3 percent after the introduction of the female condom. So it is unclear to what extent the
availability of the female condom motivated the increased protection, as opposed to involvement in the study per se. The authors concluded, “Introducing the female condom into a male condom programme resulted in a small, but significant, increase in the proportion of sex workers reporting 100% condom use with all partners.” Biological markers suggested that the underreporting of unprotected sex was consistent throughout the study, thus not affecting the trends, but, without fuller details, it is unknown whether underreporting might have affected their significance.

**Studies evaluating indirect effects on condom-use**

**Circumcision**

Two studies of male circumcision were the only ones appropriate for meta-analysis. Does circumcision to reduce the risk of HIV thereby reduce condom-use? Three studies addressed this question in similar ways; two of them, however, came from the same trial. The overall evidence suggests that, for unknown reasons, circumcision did not lead to significant, or at least large, reductions in condom-use.

Bailey et al. (2007) interviewed almost 1400 men — mostly Luo — in Kisumu, Kenya, who received circumcision. The researchers compared them to an equal number whose circumcisions were delayed for two years. Biological markers were also collected. The authors concluded, “No behavioural risk compensation was observed,” because condom-use actually increased among circumcised men.

However, the data could be interpreted to indicate that significant behavioral risk-compensation did occur, as condom-use among uncircumcised men increased even more, and the difference was significant at 24 months (the only period for which significance was reported). It is plausible that two processes occurred simultaneously: 1) circumcision led a significant portion of men and/or their partners to feel less risk and thus to decrease their use of condoms and 2) involvement in the program or other social influences led more men in both arms of the study to increase their use of condoms.

Mattson et al. (2008) took a subset of participants in the same study to investigate this question differently. They constructed an 18-item index of risk, including questions about condom-use, and they tracked changes in STIs (excluding HIV). Unlike in Bailey, the follow-up ended after one year. Although the authors did not report the p values for the individual items in the index, they stated that none of the differences between the treatment and control groups were significant. The trends in the biological markers generally coincided with those of the interviews. As above, the control and treatment groups each had significant declines in risky behavior, raising questions about the influence of other social pressures and of participation per se.

Gray et al. (2007) studied circumcision in Rakai, Uganda. Of almost five thousand participants, half received treatment for the study and the other half had to wait for two years. Follow-up occurred at 6, 12, and 24 months. The authors found “no consistent or substantial evidence of behavioural disinhibition after circumcision in the study population,” including condom-use.

Combining the full results from Rakai (Gray 2007) and Kisumu (Bailey 2007), risk ratios were calculated at baseline and at 6, 12, and 24 months for consistent condom-use and for unprotected sex with any partner over the previous six months. Differences in consistent condom-use between control and treatment were tiny and not significant at the 95 percent
confidence interval at any data-collection point. With one exception, the same was true for unprotected sex with any partner. However, at 12 months, the risk ratio was 1.0592, which, while still quite small, was significant at the 95 percent confidence interval (1.0243-1.0952). Taken as a set, though, these results strongly suggest that any reduction in condom-use resulting from circumcision was very low.

These results raise the question of why this would be. Given the myriad reasons men (and women) find to not use condoms, it would not be surprising to find that a significant number would reduce their use of condoms after circumcision. While participants in the study received information and counseling on the incomplete protection provided by circumcision and on the continuing need to use condoms, other studies have shown that such information and exhortations are not significantly correlated with effective condom-use (e.g., Quigley et al. 2004, Jamison et al. 2013, and Ross et al. 2007). Of course, public-health education might result in greater self-reports of condom-use, but biological markers belie these reports. Thus, if the self-reports of circumcised men are accurate, it is surprising that these men did not take advantage of this excuse to not use condoms. As in other research reviewed in this report, this result suggests that the participants understood the process of transmission differently from public-health policymakers.

**ARV/ART**

Informal explanations of the recent rise in the prevalence of HIV infections in Uganda frequently invoke the psychological effect of ART. It is hypothesized that Ugandans no longer perceive HIV/AIDS to be a death sentence and thus feel less urgency to protect themselves. (This is different from the less-common argument that ART has increased the lifespan of recipients, thus leading to higher prevalence despite level or decreasing incidence, which might also be due in part to ART.) No study included here addressed this question in the general populace, but two studies with significant methodological weaknesses examined changes in the sexual behaviors of recipients of ART recipients; they found increases in condom-use. The reasons for this change were not addressed.

Bunnell et al. (2006) examined the sexual practices of ART recipients in rural Tororo, Uganda. Along with ART and the usual provision of condoms, the participants received prevention counseling, and their partners got VCT. The 926 participants were self-selected, and the results depended on self-reports of behavior that they made to their health counselor, rather than to an independent interviewer. Thus, the findings are questionable. Nonetheless, the researchers found that, after six months, condom-use increased equally and significantly over the baseline values among men and women, regardless of the partner’s HIV status. Reasons for these increases in condom-use were not examined at all.

Bateganya et al. (2005) compared recipients of ART at a Kampala clinic to non-recipients. Descriptive characteristics of the treatment and control groups were quite dissimilar, and the researchers did not disaggregate results. They found increases in condom-use among recipients of ARVs in two cases: consistent use with a spouse and use at last sex with regular partner. They found no significant decreases in condom-use by type of partner.
Non-condom contraception

Because condoms have two main uses — disease prevention and contraception — a pair of studies with methodological weaknesses asked whether providing other forms of contraception would affect condom-use.

Ngure et al. (2009), which considered the provision of non-barrier contraception, is basically useless to understand condom-use. Among other methodological problems, such as differences between control sites, the authors suspiciously did not disaggregate the treatment group’s figures for condom-use from those of the control groups.

Mark et al. (2007) examined the effort to promote “dual-method contraception” among couples in Lusaka, Zambia. The participants did not come from the general population but from participants in other studies at a VCT clinic. The study had three arms: a control group, a group to whom non-condom contraceptives were offered, and one receiving non-condom contraceptives and training in resisting pressures to conceive. Follow-up occurred every three months; reports of inconsistent condom-use led to additional discussions of condom-use, so the process of collecting information was neither anonymous nor neutral. Thus, it is not surprising that the respondents reported very high condom-use, which did not decline with the use of any non-barrier contraceptive. If these questionable results are accurate, then this would imply that these couples use condoms to prevent HIV infection.

HIV testing

Does knowing one’s HIV status affect condom-use? Hearst et al. (2013) used the most recent MEASURE DHS data from four African countries – Tanzania, Zambia, Swaziland, and Côte d’Ivoire – to examine this question and make recommendations regarding testing. Perhaps because of the nature of the data, the researchers relied on survey respondents’ claims to know their status, without any indication of how and when they might have obtained this information and what kind of counseling accompanied a test. (Other studies have found that some people assume that they are already infected, without receiving testing.) Thus, the researchers assumed that the results of the blood tests taken as part of the survey matched respondents’ beliefs about their serostatus.

The data were analyzed appropriately by the standards of this genre of study, with disaggregation by country, gender, marital status, knowledge of HIV status, and actual HIV status. In short, a higher percentage of respondents who knew their status used condoms consistently — even those who were negative. In Tanzania and Zambia, this difference was more likely to be significant among married men and women and among HIV+ respondents. Correlates of lower condom use — for example, among unmarried men who knew that they were HIV+ — were not significant.

Unfortunately, correlations based on a single survey — even if they start from accurate data — make any causal interpretation highly debatable. It is possible that testing per se, regardless of the result, led to greater condom-use, but it might be that people who were more likely to use condoms were also more likely to get tested. There are more-complex explanatory scenarios, too. In short, this research may perhaps spur more-convincing efforts to understand the effects of HIV testing on behavior, but, as it stands, at best it suggests that testing increased many people’s consistent condom-use — especially HIV+ married people.
(Hearst et al. also argued that the surveys indicated that condoms were, in general, ineffective at preventing the spread of HIV. This result depended on accurate answers to the relevant questions on these surveys, which is questionable.)

**Syndromic management of STIs**

Kamali et al. (2003) tested whether a behavior-change intervention and the syndromic management of STIs — not including HIV — affected rates of condom use. They divided 18 rural communities in the district of Masaka, Uganda, into one of three groups: control, receiving syndromic management, and receiving both syndromic management and the behavior-change intervention. With tweaking (combining the results from both follow-up periods), condom-use with the respondent’s last casual partner was found to be small but significant in the group receiving both interventions. Unfortunately, several reasons exist to doubt this result, in addition to the pooling of follow-up rounds: for example, the self-report data were unreliable, as 30 percent of respondents who said that they had ever used condoms at baseline denied ever using condoms at round two, and the decrease in the incidence of HIV was not significant. Other problems with the study included a lengthy period of data gathering in each round: more than two years each for the baseline and round two. Finally, the authors did not explore reasons that this intervention would be effective at all, much less with some participants and not others.

**Enhanced care and support**

Finally, MacNeil et al. (1999) examined whether “enhanced care and support” increased condom-use “among 154 newly diagnosed HIV-positive individuals from semi-urban Tanzania.” (The location was not specified.) Follow-up occurred at three and six months. In short, the treatment provided no significant gains over the control in condom-use at last sex, but both groups analyzed jointly showed a significant increase over baseline. Thus, it is possible that diagnosis as HIV+ provided impetus for a significant proportion of people to change their behavior. Why they would change — and others would not — was unexplored.

**Survey methodology**

Much like Plummer et al. (2004, discussed above), Hewett et al. (2004) addressed perhaps the most fundamental issue in these quantitative studies: how accurate is the data? They interviewed some adolescent females in Kisumu, Kenya, face-to-face and others using a computer and received quite different results. Both groups were then interviewed again in person, and, with more probing, many of their responses changed. The most important finding was that the different methods yielded different results. The computer method seemed more accurate than using an interviewer because of the higher rate of reports of sensitive information: for example, coerced sex and sex with a relative, stranger, or older man. “However, differences by mode [of data collection] for ever having sex and sex with a boyfriend were not significant.”

Nonetheless, 27 percent of the respondents who denied having sex to the computer in the main interview unexpectedly admitted in the face-to-face exit-interview to having had sex. So even the computer method produced significantly unreliable results. Also, 7 percent denied ever having sex in the exit interview after reporting it to the computer.

This evidence, along with similar findings in other studies cited throughout this review, underlines the need to find better ways of collecting information. Studies of sensitive topics that are based on surveys using any methodology — but especially face-to-face interviews — are of dubious value.
On a complementary note, Onyango-Ouma et al. (2009) detailed the lengthy process of gaining subjects’ trust, specifically when doing research among men who have sex with men.

Slaymaker (2004) compared basic UN indicators, as of 2004, to the way that they had been used in studies and the results for these indicators in these studies, pointing out discrepancies in both of the above. She also noted ways in which the same results for an indicator might spring from markedly different processes. The author made reference to observational studies indicating different behaviors as risk factors but unfortunately did not specify the studies or the behaviors. This was a critique from within the standard perspective of public-health research, not calling for radical changes.

Coast (2007) noted a potential problem with the DHS survey questions regarding HIV. For the Maasai, the disease terminology that was used overlapped with that for other diseases, so some of their answers might have resulted from, or in, a misinterpretation. Likewise, McCombie (2003) showed the difficulty of translating an HIV-related survey between English and Luganda.

**Qualitative analyses**

**General features**

Qualitative research on condom-use or on topics that might help explain condom-use employs a great diversity of methods to generate data. The analysis typically is more uniform than the methods, with one or more researchers searching interpretively for patterns without recourse to statistical tools. From a post-structuralist perspective, quantitative studies are also fundamentally interpretive even though practitioners have created an aura of objectivity around them; in qualitative studies, this process is more open.

Because professional standards of statistical analyses favor data that were produced in a particular fashion — standardized questionnaires for this topic — and because statistical analyses enjoy greater prestige in many policymaking bodies, some qualitative researchers strive to achieve a similar uniformity in the production of knowledge, whereas others proceed in a more ad hoc fashion. Most of the studies reviewed here combine approaches, such as individual interviews and focus-group discussions.

The greatest weakness in this collection of articles is a frequent mismatch between general, theoretical statements and support. On the other hand, the support for more-specific statements, such as reasons for (not) using condoms, is stronger. In addition, few of the studies depend on in-depth fieldwork, especially participant-observation, which yields ever-deeper understanding of research subjects’ lives.

The greatest strength of the research reviewed here is that many studies attempt to directly explain people’s reasons for condom-use, which often involves asking people directly. Qualitative researchers also have the opportunity — whether by design or simply by force of circumstance — to alter their approach to take advantage of unexpected information. Another important strength of qualitative studies is the potential to reveal diversity masked by country-level statistics, whereas a thorough literature-review allows qualitative researchers to recognize commonalities across groups.

In balance, there is good reason to believe that, compared to quantitative approaches, qualitative research can produce more-accurate results regarding sensitive topics such as sexual behavior.
There are many productive ways to categorize these qualitative studies: by geographic region, primary methodology, social group, topical focus, and more. In this review, because of its purpose, research is grouped according to reasons found for condom-use or, more often, non-use. Some studies receive a more fulsome discussion than others, including additional information about condom-use.

**Reasons for use**

**Streetwalker/bold personality**

In a fascinating study, Agha and Nchima (2004) found that streetwalkers in Lusaka, Zambia, were more likely to use condoms with clients than were sex workers operating out of nightclubs. Indeed, the streetwalkers were more likely to insist on condom-use, in a way that fit with their bolder personalities. However, it is unclear to what extent this boldness was an adaptation to such exposed and stigmatized sex-work or whether bolder women gravitated to (or survived longer in) this form of sex-work. Whereas streetwalkers were almost entirely focused on earnings, nightclub-based sex-workers were more focused on establishing a conventional boyfriend-girlfriend relationship with clients, which typically would not include condom-use. In both cases, the competitive environment and women’s extreme financial straits meant that demanding condom-use often meant losing a client. Financial rewards also were key, as they could charge at least twice as much for unprotected sex. So sex workers rarely insisted. Plus, many seemed resigned to their vulnerability, having been beaten down by the violence and disease of their jobs and by the difficulty of their lives outside of work.

Risk-perception did not drive non-use among sex workers. They generally considered their risk of HIV and other STIs to be high.

Unfortunately, the researchers did not study the sex workers’ clients, to test whether they were more willing to use condoms with streetwalkers because of their reputation for carrying disease. If so, then this would jibe with widespread findings that many people use condoms tactically, based on their perception of their partners’ serostatus.

Despite the rich detail in this article, it left some questions unanswered: For example, one quote suggested that women put thoughts of infection out of mind while working — if this was common, could that make them push less for condoms? Also, the authors implied that some sex workers did not express a desire to use condoms consistently. What about clients who want to use one? What if neither of them has one — or do the women always carry some?

In summary, it is unclear whether the indicator for greater condom-use in this case is the situation of streetwalking or the attribute of boldness in a sexual context.

**ART**

For a subset of recipients of ART, the therapy gave them a sense of a new beginning in which they would live positively, including by using condoms (Sarna 2009). This might explain the results of the quantitative studies (which had serious methodological weaknesses) reviewed above — that condom-use either increased or did not decrease.

**Stigma**

Ujiji et al. (2011) found that urban women known to be HIV+ were reviled openly by neighbors when they became pregnant. Perhaps observing or experiencing this stigmatization led some couples to use condoms.
Religious beliefs
While the most common finding was that religious teachings discouraged or prohibited
condom-use, the opposite could be true.
In some cases, widespread beliefs provided hints of possible avenues for
condom-promotion. For example, Beckman (2010) found that Zanzibari Muslims perceived
semen to be polluting and disease-causing, that different partners’ sperm might meet inside an
unfaithful woman and cause disease or a troubled pregnancy, and that sexual fluids from HIV+
partners could combine to form a more virulent strain. Extrapolating beyond Beckman’s analysis,
it is possible that these beliefs could provide openings for greater condom-use.

Fear of disease
It seems obvious to state that people use condoms out of fear of contracting HIV or other
STIs. Perhaps this is why some researchers did not specify this motivation. Lees et al. (2009),
though, did so among women who accepted money for sex in urban Mwanza, Tanzania, as did
Outwater (2001) for sex workers in Morogoro, Tanzania.

Successful tactics
Lees et al. (2009) found that women accepting money for sex in Mwanza, Tanzania, might
negotiate condom-use explicitly beforehand and then continue to insist on it during intercourse.
Another woman said that she would convince a client that she simply wanted to avoid pregnancy,
which apparently was more acceptable than the truth of avoiding infection.

Reasons for non-use
Unfortunately, the research reviewed presented many more reasons for not using condoms
than for using them.

Fifty reasons
Surprisingly few studies asked subjects to explain their own behavior. Even focus-group
discussions often asked participants to make generalizations about local practices, which yields
different responses. Thomsen et al. (2004) demonstrated the richness of information that direct
questioning can produce. Two male and two female participant-observers collected information
from clients of female sex workers, from female sex workers, and from unspecified “key
informants” in bars and similar venues in two areas of Mombasa. They asked, what reasons do
clients of female sex workers give for not using condoms?

By far, the most common reason given was that condoms reduced pleasure, when men
were paying for sex to experience pleasure. Worse, they also had to pay for the condom. The
numerous other reasons — fifty are listed — might have been sincere or rationalizations. They
included claims that the men could avoid HIV through other means, that condoms weren’t
effective, that they were dangerous, that they were too difficult for men to use, or that HIV
transmission was in God’s hands. In fact, respondents listed almost all of the reasons found in the
other studies reviewed here and added a few others. While some reasons might have been more
important than others, the authors point out that “the important fact is that there is an underlying
disregard for risk in MSSWs in Mombasa, which is heightened (or perhaps caused) by a great deal
of sexual desire.” The authors recommended, “There is a need to change HIV/AIDS prevention
messages from preventing disease to eroticising safer sex, particularly in groups such as men who have sex with sex workers.”

The list of comments and the identification of men’s primary concern as pleasure appear to be well-established and quite valuable. This study demonstrates the strength of not creating analytical categories in advance and then forcing results into them. Similar studies that ask why men and women use condoms and why they have changed their practices in either direction would be helpful.

 Desire to reproduce

One of the main reasons that people disliked using condoms was the desire to reproduce. Cheney (2010) found that public discourse in Uganda strongly favored fertility and monogamy, despite the diversity of actual practices. Cheney’s concern was with gay rights, but this dominant discourse might have encouraged the de-emphasis and even rejection of condoms.

Hollos and Larsen (2008) thoroughly reviewed literature suggesting that fertility was vital to women in many African settings and then investigated whether infertility were stigmatized in a low-fertility, urban area — in this case, Moshi, Tanzania. The answer was clearly yes, which would make condom-use unlikely for young women who were in stable relationships or who were trying to solidify one. But, in this environment, secondary infertility — that is, subsequent to the birth of a couple of children — was not stigmatized, perhaps because children were more of an economic drain than boon in an urban area. Thus, building on Hollos and Larsen’s finding, in a low-fertility environment, the contraceptive effect might not be an obstacle to using condoms to protect against HIV. That is, areas with low birthrates might still be comparatively ‘fertile’ ground for condom-promotion programs.

Moyer (2012) presented a case study from Zanzibar of HIV+ activists who wanted children. One aspect of their desire was that the female partner wanted a child to cement her relationship with the male partner. Wyrod (2011) also documented the determination of HIV+ individuals and couples to reproduce.

See also Remes et al. (2010) for similar attitudes in rural Mwanza, Tanzania, and Sarna et al. (2009) for ART recipients in Mombasa.

In an exception to the valuing of fertility, Izugbara (2011) contended that women in Nairobi did not welcome pregnancies outside of marriage, which should have increased their desire to use condoms in such situations.

Other hopeful findings are scattered among disparate articles: Sarna et al. (2009) reported condom-use to prevent pregnancy among ART recipients in Mombasa. Spronk’s (2005) ethnography of young, urban professional women in Nairobi included one woman who proudly kept a collection of different-colored condoms, apparently as contraceptives. In Kampala, Tamale (2005) observed a change from focusing on reproduction to emphasizing pleasure; perhaps this trend will lead to greater acceptance of condoms.

Apter (2012) did not address condom-use directly, but he documented an interesting contrast to the logic employed in most studies. He showed that the people of northern Zambia, along with many Congolese refugees occupying camps there, were matrilineal. Thus men were expected to focus on the wellbeing of their sisters’ children who, unlike their wives’ children, were part of their kinship group.
Extrapolating beyond Apter’s research, this might mean that, compared to patrilineal groups, husbands in matrilineal societies would pressure their wives less to get pregnant and their sisters more, and they thus might be more willing to wear condoms. Wives, in contrast, might feel more motivation to produce greater numbers of offspring. This is an issue that deserves direct attention.

Another potential area for research involves witchcraft. Congolese inhabitants of a Zambian refugee camp commonly believed that witches went “through” other women’s husbands to make those women infertile. It is possible that NGOs pushing condoms could be seen as analogous.

**More money for female partner**

An apparently universal finding among studies reviewed here was that sex workers received considerably more money — typically twice as much — for sex without a condom. Sex workers’ financial straits made this extra money difficult to pass up. Examples included Norris and Worby (2012) for residents on and near a plantation in northern Tanzania; Lees et al. (2009) for Mwanza, Tanzania; and Okal (2009) for male sex-workers in Mombasa, Kenya.

Payment was involved in sexual relations from the start among adolescents in Nyanza and Rift Valley, Kenya (Maticka-Tyndale et al. 2005). Indeed, Wight et al. (2012) found that transactional sex discouraged condom-use and was the norm, rather than a survival mechanism unique to the poorest families. Also, parents in poor families sometimes sent their daughters out with the implicit mission to exchange sex for money or food for the household. A similar pattern was observed in the Mwanza region of Tanzania (Wamoyi et al. 2011).

The solution to the inequalities that facilitate risky sex might not be public-health programs; instead, broader changes that bring hope and increase individual autonomy in sexual decision-making might decrease actions that lead to HIV infection. As Lockhart (2008), contended: “identifying ways to enforce Tanzania’s land-tenure laws and protect the inheritance rights of widows in rural areas could have a significant impact on the lives of women and dependent children in a manner that does more to reduce their vulnerability to AIDS than any number of public health and education strategies could possibly do.”

**Ideology of male privilege**

Nyanzi et al. (2005) argued that economic inequality did not, by itself, explain women’s subordination. Interviews with market women — but not their male partners, unfortunately — revealed that their greater social and economic autonomy did not extend to the bedroom, where learned expectations about gender relations trumped financial independence. In short, the man still made the decisions.

**Condoms reduce pleasure**

One of the most obvious — yet understudied — reasons that people do not like to use condoms is that sex is less pleasurable while using them. Even women selling low-priced, casual sex disliked using condoms because they restricted pleasure (Lees et al. 2009). Okal (2009) described a similar situation among male sex-workers in Mombasa, Kenya. Similarly, sex workers in Morogoro, Tanzania, maintained that condoms broke and that repeated use caused abrasions (Outwater 2001).
See also Remes et al. (2010) for similar attitudes in rural Mwanza, Tanzania, and Sarna et al. (2009) among ART recipients in Mombasa.

**Egocentrism**
While not the direct focus of much research in these countries, individuals’ lack of concern regarding their effect on others’ welfare — including that of their spouses — was striking.

Andretta (2000), summarized how the Kaguru of Tanzania learned that all relationships were to be manipulated for improved standing, and this appeared to include marriage. Perhaps it is a similar attitude that leads HIV+ people to not disclose their status to their sexual partners. Their partners’ ignorance reduced the likelihood that they would use condoms. Moyer (2012) presented a striking example of a chain of non-disclosure and infection among people in Zanzibar. Nyanzi et al. (2004) found that many motorcycle-taxi drivers in Masaka, Uganda, believed themselves to be already infected with HIV and thus not to need condoms. Similarly, HIV+ women in Kericho, Kenya, said that people were concerned to protect themselves but not their partners (Todd et al. 2010).

In contrast, ART recipients in Mombasa frequently mentioned a desire to protect their partners by using condoms (Sarna et al. 2009).

**Logistical problems**
Even if people desire to use condoms, the circumstances of obtaining, storing, and using them makes this difficult. The description of women’s lives in rural Busia, Kenya, made the discrete acquisition and storage of condoms seem unlikely (Ujiji et al. 2011). In research among women in Nairobi, Izugbara (2011) was told that unmarried women would have emotional difficulty obtaining condoms, as they would feel that this marked them as wanton. In contrast, married women were expected to have sex and thus could buy condoms without as much embarrassment. Lees et al. (2009) found that women who regularly accepted payment for sex would have intercourse hurriedly and in places where having the light and space to get out a condom was unlikely.


**Religious beliefs**
Remes et al. (2010) reported that condom-use was said to be counter to Christianity and Islam in rural Mwanza, Tanzania. Sarna et al. (2009) reported a similar finding among ART recipients in Mombasa.

**Inebriation**
Sexual transactions often were initiated while both parties were inebriated. This made women in Mwanza, Tanzania, more likely to accept risk and, thus, eschew condoms (Lee et al. 2009). See also Okal (2009) for a similar situation among male sex-workers in Mombasa, Kenya; Outwater (2001) for sex workers in Morogoro, Tanzania; Remes et al. (2010) for rural Mwanza, Tanzania; and Sarna et al. (2009) among ART recipients in Mombasa.
Another possibility not considered in this literature results from men’s reduced ability to sustain erections after drinking alcohol. This might make condoms an even greater threat to successful copulation.

**Forced sex**

Physical coercion appeared to be a common feature of sex in the countries under consideration. In this situation, the ability to negotiate condom-use is almost nil. Dahlback found rape was the first sexual experience for a high percentage (40 percent) of young Zambian women getting abortions in Lusaka. Rape as a mode of HIV transmission was also mentioned in Haram (2005) for the Meru of Tanzania. Sex workers who insisted on condom-use sometimes were raped without a condom by clients (Lees 2009).

**Vaginal practices and “dry sex”**

Bagnol (2008) presented a very rich depiction of vaginal preparations and the ideology of “dry sex,” linking it to people’s broader worldview. While this article derived from research in Mozambique, similar practices and desires have been documented in Tanzania and Rwanda. The stretching of the labia minora and the use of treatments to dry the vaginal interior were linked holistically to ideas of womanhood, procreation, and broader social relations. Condoms were considered to contradict this important act of relating by obstructing the direct sensation of sex. They also were perceived negatively as “wet” because of the lubricant and also as deadening the desired combination of pleasure and pain from direct friction. Many healthcare workers shared this ideology.

Likewise, Koster (2008) provided fascinating ethnographic detail and situated Rwandan sexual practices in their social and cosmological context. She found that Rwandans considered the exchange of male and female fluids during sex to be vital to social cohesion. This analysis implied that condom-use was thus, anti-social.

A study of changes in economic relations and sexual practices at a sugar plantation in northern Tanzania (Norris and Worby 2012) also found that residents rejected condoms as “wet” when they preferred “dry sex.” However, based on other information in the article, it is possible that they meant “dry” not literally but as a common metaphor for “unadorned.”

Montgomery (2010), reported that a microbicidal gel, tested in Tanzania, Uganda, and Zambia, was welcomed by those women who felt that it improved their pleasure and at least did not reduce their partner’s. Other research suggested that condoms were unlikely to meet this test. One woman stated that the gel kept her ‘dry,’ by which she meant feeling good. Thus, for at least some women, “dry sex” entailed more or different attributes than simple dryness.

In contrast, the Baganda are apparently a “wet sex” group, as Tamale (2005) noted a ssenga urging women to be well-lubed.

**Radar**

Many people believed that they could sense when a potential sexual partner was infected and would thus either avoid sex with this person or take measures to reduce their risk, such as by using a condom. Bagnol (2008) noted this for Mozambique, as did Sarna et al. (2009) for ART recipients in Mombasa.
Stereotypes of infected people
Many researchers have found that subjects believed that certain groups of people were essentially disease-free, while others were HIV carriers. The sexual partners of the latter were perhaps more likely to use condoms with them. Sexual partners of other categories of people presumably felt relatively safe without using a condom.

These dangerous-seeming groups differed by locale. Among Haya in Kagera, Tanzania, AIDS was thought to have been brought to the area from Uganda by rich Haya businessmen (Weiss 1992). (Some Ugandans in Masaka believed that it came from eating stolen fish from Tanzania [Seeley et al. 2009]). Among Luo in Mara, Tanzania, dangerous people were young, female, money-earning, and rural-urban migrants. Many Acholis viewed the Ugandan military as bringing AIDS to their people and infecting women and perhaps men by rape (Finnstrom 2009). Among the Meru of Arusha, Tanzania, AIDS was originally associated with town-dwellers, and this became extended to attractive and wealthy people. In Mwanza, previously married women were held in suspicion (Lockhart 2008), and, among young men, “city” girls were considered unsafe (Remes et al. 2010). In rural northern Tanzania, some villagers believed that white people invented AIDS to kill them (Mshana et al. 2006). They also associated infection with sex workers, unmarried women, and deviants. See also Wight et al. (2012).

Conversely, in the Kafue Flats, Zambia, healthy-looking women were presumed to be HIV-free (Merten and Haller 2007).

Sexual competition
Competition among women for sexual partnerships with men — which bring greater financial stability along with any emotional and status benefits — can provoke them into acceding to men’s desires. Norris and Worby (2012) noted that privatization of a sugar plantation in northern Tanzania led to women’s increasing reliance on income from sex and increasing competition for clients, which reduced their ability to negotiate condom-use. Lees et al. (2009) and Agha and Nchima (2004) also found that sex workers feared losing business by insisting on condom-use. More generally, Bao and Jankowiak (2008) reviewed the internal politics of polygynous marriages on different continents. They found sexual competition among wives to be common.

Misinformation
The spreading of incorrect information about condoms, sometimes intentionally, was commonly noted. Among the reasons for this misinformation was that healthcare workers, educators, and religious figures feared that admitting condoms’ effectiveness would encourage promiscuity.

Bastien (2009) provided a good account of sources and kinds of misinformation directed at teenagers regarding condoms in rural Kilimanjaro, Tanzania. Parents mostly avoided discussing such issues with their children. Teachers, out of embarrassment about sex, focused their HIV-prevention messages on “sharp objects,” including, apparently, a blood-test syringe. Healthcare workers spread false concerns, such as the laundry and dishes of an infected person. Churches, the institution most eager to address condom-use, sometimes claimed that condoms were ineffective. In this environment, young people felt concern but it was directed at condoms that had been pre-infected with HIV, at tiny holes in condoms that permitted HIV through, at
pre-infected menstrual pads, and at shared toothbrushes. Unfortunately, Bastien did not tie these misconceptions to rates of condom-use.

Similarly, Maticka-Tyndale et al. (2004) provided an example of local ‘experts’ supplying misinformation about condom-use and otherwise undermining a school-based program in Nyanza and Rift Valley, Kenya.

See also Mshana et al. (2006) for rumors of pre-infected condoms in rural northern Tanzania; Remes et al. (2010) for similar rumors about condoms’ ineffectiveness in rural Mwanza, Tanzania; Sarna et al. (2009) for comparable beliefs among ART recipients in Mombasa; Sommer (2009) for Chagga girls in northern Tanzania; and Warenius et al. (2007) for students in Zambia.

Misunderstanding

Misunderstanding might result from processes besides deliberate misinformation. Indeed, this might be one of the most important of issues that researchers have neglected. Given the amount and quality of formal education that many people have received, the daily discourse or lack thereof from a scientific perspective, and the effects of disease and deprivation on cognitive development: how do different people understand issues such as the transmission of HIV and the progression of the infection? Correct answers, from a biomedical perspective, on a test might obscure significantly divergent beliefs. These beliefs might encourage excessive vigilance or discourage the biomedically accepted methods of reducing risk.

Geissler (1998) showed that Luo schoolchildren in western Kenya learned traditional beliefs about illness more thoroughly than biomedical beliefs. These ideas included the conviction that illness, which could never be completely eradicated, was the result of external agents upsetting the balance maintained by worms inside the body (see also Prince et al., 2001a). Luo children adopted this viewpoint as fundamental not because of some automatic adherence to tradition but because the process of imparting this knowledge — interactively by elders such as grandmothers — was superior. (He also found non-scientific ‘folk’ concepts in the school’s textbook.) This is an important lesson for programs to teach biomedical knowledge: the process of teaching either must be more convincing than the competition or must incorporate it, for example by training grandmothers.

Similarly, Hausmann-Muela and Muela (2003) demonstrated the integration of folk and biomedical models into the more-fundamental folk framework by women in Ifakara, Tanzania, who understood the biomedical approach well.

Blystad and Moland (2009) provided an analogous example, in this case of women who were overzealous in PMTCT because they did not fully understand transmission.

See also Nichter (2001) for an example from Southeast Asia of understanding people’s different ideas of STI causation and treatment.

How do children learn about sex? In rural Masaka district, Uganda, boys observed older people having intercourse in the bushes, they practiced with friends, and then they were goaded by older males to start in earnest (Nobelius et al. 2010). Remes et al. (2010) reported that males in rural Mwanza, Tanzania, encouraged each other to not use condoms.

Young Zambian women told Dahlback (2010) that friends were their main source of information on contraception — and thus perhaps HIV prevention. Most thought that the female partner was responsible for avoiding pregnancy & STIs.

Among Luo of rural Kenya, an older female instructed girls about sex (Prince et al. 2001b). The Chagga of northern Tanzania enacted a similar pattern, which Sommer (2009) found in
decline. A similar institution, that of the *ssenga* among the Baganda of Uganda, continues to thrive. Tamale (2005) observed and interviewed participants in ssenga sessions, which now take place in the mass media and in commercial settings. Such trusted and charismatic experts might have considerable influence in campaigns to promote condom-use.

At least in rural Mwanza, Tanzania, young people were unlikely to receive sexual instruction from their parents. Children were increasingly independent, had more schooling than their parents, and had more instruction in sexual health, making parents exert and have less control than before (Wamoyi et al. 2011).

The foci of public-health campaigns were perhaps partly responsible for other misconceptions: for example, that penis-anus penetration was relatively safe. The majority of male sex workers in Mombasa, Kenya, who spoke with Okal (2009) did not know that people could be infected with HIV via anal sex. The minority who did use condoms sometimes ended up applying less-expensive, oil-based lubricants, which could degrade them.

Lockhart (2002) studied “kunyenga,” or forced, non-erotic anal sex among street boys in Mwanza, Tanzania. The boys did not consider this to be “real sex” (or a homosexual act), did not consider it to be an avenue for HIV transmission, and did not wear condoms. HIV could be transmitted between the boys and the other residents of Mwanza because some of them had girlfriends, from whom they felt no risk of HIV and with whom they did not wear condoms. Transmission could also occur because a few street-boys had sexual relations with sex workers, only rarely using condoms.

Mshana et al. (2006) found that villagers in rural northern Tanzania underestimated the time-frame of AIDS onset and thus assumed that anyone who lived for several months after a risky event was not infected. (See also Wight et al. [2012].) Conversely, some believed that HIV infection was more widespread than it was.

**Belief in non-biological causes**

Some research subjects saw disease, and HIV/AIDS in particular, as resulting ultimately — although perhaps not proximally — from causes that were alien to biomedical accounts. Bastien (2009), for example, made a distinction between people’s understanding of how an infection occurred and *why* it occurred, finding that many explained the latter in cosmological terms. In this vein, Beckman (2010) found that some Zanzibari Muslims believed that AIDS came from God, against whose will a condom would be useless. Luo in Mara, Tanzania, believed that immorality contributed to a person’s risk of infection (Dilger 2010). Similarly, Meru from in and around Arusha, Tanzania, saw AIDS as punishment for moral transgressions (Haram 2005).

**Fatalism**

Quite a few authors found that a fatalistic attitude contributed to people’s lack of condom-use. These included the Meru in and around Arusha, Tanzania (Haram 2005). Hard, dangerous lives made street boys in Mwanza discount the danger of dying from AIDS, since so many other mortal threats were much more immediate (Lockhart 2002; for a tragic example, see Lockhart 2008). See also Merten and Haller (2007) for the Kafue Flats, Zambia; Mshana et al. (2006) for rural northern Tanzania; Sarna et al. (2009) among ART recipients in Mombasa; Seeley et al. (2009) among fishing folk in rural Uganda, and Wight et al. (2012) for rural Tanzania.
Conversely, Wight et al. (2012) also supported the idea that future-oriented people were more likely to use condoms.

**Legal barriers**

According to Beckman (2010) sex outside of marriage was illegal in Zanzibar, making it nearly impossible for people known to be unmarried to obtain condoms.

**Distrust of partner**

It is well documented that men have attacked female partners who proposed condom-use by accusing these women of infidelity, of being infected, or of not trusting the man himself. For example, the Meru of Arusha, Tanzania, prioritized their relationship and their reputation over using condoms for risk reduction (Haram 2005). Men in Mwanza characterized women’s suggestion to use a condom as a lack of trust (Lees et al. 2009). See also Okal (2009) for similar attitudes among male sex-workers.

Women might have similar suspicions: Dahlback (2010) found that young women getting abortions in Lusaka, Zambia, also reacted with suspicion when men suggested using a condom.

**Taboo topic**

Discussing sex openly was a taboo topic among many people. Dahlback (2010) found that young Zambian women in Lusaka felt shy about broaching the topic of condom-use with their boyfriends. Even female sex-workers in Morogoro, Tanzania, were too shy to discuss sex openly among themselves or with a researcher (Outwater 2001), making the prospects for open communication about sexual health seem unlikely.

**Underestimate epidemic**

If, for whatever reason, people underestimate the extent of the HIV epidemic, they might feel less urgency to use condoms. This might have been the case when Dilger (2008) found that many Luo in Mara, Tanzania, claimed, sincerely or not, that what seemed to Dilger to be AIDS was a locally recognized disease called *chira*, which had different causes. Similarly, Mshana et al. (2006) found that people in rural northern Tanzania recognized the biomedical AIDS and another version that was caused by witchcraft and curable by traditional means. See also Wight et al. (2012).

**Scripts**

Some authors contended that people act according to scripts, or schema for action, without constantly considering and reinventing patterns of behavior. (But see Obrist [2004] for a claim that people constantly reinterpret and test expected practices.) For example, Hausmann-Muela and Muela (2003) found that women in southeastern Tanzania handled their children’s malaria-related symptoms in ways that did not follow from an analysis of cause and effect but from an ingrained sense of what felt right. Perhaps similar unreflective, intuitive patterns of action guide many people’s sexual lives, such as condom-use. This might explain why condom-use felt appropriate to many people only in a temporary, casual relationship and why men claimed that the money they gave to regular partners entitled them to sex without condoms (e.g. Lees et al. 2009).

Maticka-Tyndale et al. (2005) convened 28 focus-group discussions with young people in Nyanza and Rift Valley, Kenya, and found that adolescents depicted a fairly regular sequence of
expected events leading to sex — that is, scripts. Unfortunately, the authors made no attempt to verify that actual encounters conformed to these expectations. Interestingly, though, they suggested that following a stereotypical course of action reduced young people’s sense of responsibility for their behavior. By extension, people might feel less responsibility for the effects of not using condoms if they perceive this to be the widely practiced, default course of action.

In a similar example, women in the Kafue Flats of Zambia increased their risk by decreasing their self-perceived stigma. They did so by defining their sex-for-fish relations as a traditional secondary type of marriage (lubambo) (Merten and Haller 2007). Condom-use was considered alien to marital relations; this strong stereotype shaped behavior in a fashion similar to the concept of a script. See also Outwater (2001) for similar attitudes among female sex-workers in Morogoro, Tanzania.

In short, condom-promotion campaigns need to get condoms into such stereotypes regarding behavior, or “scripts.”

**Holistic example: Maasai**

Coast (2007) provided a fascinating example of the value of considering local ideologies rather than national averages and of understanding behavior and beliefs holistically, rather than in isolation. The Maasai of Ngorongoro district, Tanzania, were not likely to adhere to any part of the ABC approach to HIV prevention. Their expectations were quite different from many other East African groups described in this review, so any condom-promotion would need to employ a different strategy than one for, say, the Baganda.

These Maasai believed that semen helped females develop and thrive, so, unlike in much of East Africa, it would be nonsensical for a man to pay or give gifts for sex, and blocking the transfer of semen with a condom would be a waste. Condom-use did not create the suspicion of disease, unlike among many other people, but it did signify the rejection of procreation, which superseded disease prevention. The Maasai perceived condoms to be “other,” or alien to Maasai life. (See also Remes et al. [2010] for similar attitudes in rural Mwanza, Tanzania.) Indeed, they reportedly rejected a demonstration of condom-use that employed a model of a penis because it was not circumcised in the Maasai fashion, and they contended that condoms would not work on Maasai-circumcised penises. Religious groups in the area attacked condoms as ineffective, too.

The Maasai had limited knowledge of condoms and of HIV transmission in general. Most had heard about them, but few of these claimed to know how to use them. In a small, non-representative sample, almost every respondent mentioned “avoiding sex” as a way to avoid HIV, but avoiding knives and razors ranked higher than using a condom (15 percent), which was volunteered barely more often than avoiding needles and praying. Moreover, Coats reported that “the overwhelming response was” fatalistic, “that prevention of the disease was useless.”

Despite the above, some Maasai did use condoms under restricted circumstances: during lactation to avoid spoiling the mother’s milk.

Strategies to reduce HIV infections should take into account such rich, locally variable practices and perspectives. Quantitative studies, especially large-scale surveys, are unlikely to reveal this type of information.

**Ethnographic clues**

Sometimes the importance of information does not become apparent until later. Ethnographic studies of sexuality in these five countries included many such bits of information. Much like the Maasai of Ngorongoro described above, the Gogo of Tanzania believed that
becoming pregnant would sicken the mother’s breastfeeding infant, that sex during breastfeeding would sicken the infant, and that the father having sex with someone else would do so, too (Mabilia 2000); see also Caldwell-Ryan 2006). It is unclear whether they believed that a condom would eliminate this threat, but some used coitus interruptus. So perhaps this is an opening for condom-promotion. Other such information that could plausibly inform further research or condom-promotion included:

- Chinese doctors in Tanzania told Hsu (2002) that Tanzanian clients typically expected fast effects and a short duration of treatment. If this was an accurate portrayal, were they also unlikely to repeatedly use condoms over a period of years to avoid a far-off illness?
- Irving (2007) claimed, without providing much support, that suicide was a major taboo among residents of Kampala. If this is so, then casting unprotected sex as tantamount to suicide might be compelling.
- The Samburu of Kenya have institutionalized a “bead” relationship that allows sex between unmarried men and young women (Lesorogol 2008; see also Roth, Fratkin et al. 2001). But pregnancy outside of marriage was unacceptable, and abortion was a common recourse. A condom-promotion effort to combat the transmission of HIV might take advantage of this situation.
- The primary reason that parents of adolescents in rural Kenya were concerned about their children’s sexual relations was because they might lead to pregnancy or HIV (Maticka-Tyndale 2005). Thus they might have been amenable to condom-use.
- McGrath (1992) interviewed Baganda women in Kampala about times when women should not have sex with anyone, when they should not have sex outside of marriage, and when they should have sex outside of marriage. Men were expected to have sex outside of marriage in any case. Such local beliefs might have affected HIV transmission patterns and thus informed public-health campaigns.
- Modern individualism has created a new source of tension among elders and youth among the Iraqw of north-central Tanzania (Snyder 2002). This could perhaps be tied to changes in sexuality, as younger Iraqw were more likely to be Christian.
- Spangler’s (2011) ethnography of childbirth in rural south-central Tanzania can be read to imply that condoms could be promoted as a symbol of desired modernity.

Other methodological examples
In addition to studies whose promising methodologies are described above (e.g. Plummer et al. 2004 and Thomsen et al. 2004), a couple of studies modeled effective analytical approaches. Christofferson-Deb (2005), in studying female circumcision among the Gusii of western Kenya, provided a good example of tying sexuality-related practices to broader currents and ideologies. The families of young women had turned to individualized procedures in medical offices without community-oriented rituals, due in part to the fear of HIV infection from traditional instruments. The medicalized approach reduced the meaning of the act to signaling “sexual modesty” – that is, lacking a promiscuous and sexually vivacious nature – rather than signaling “the ability to withstand the hardships of life.” With these changes, grandparents saw little importance in a female’s circumcision, whereas young women and their families valued it to avoid stigma and to bolster their position in bridewealth negotiations.
Winskell and Enger (2009) analyzed stories about HIV/AIDS that young people across Africa developed as part of a contest. The authors’ goal was to gauge their stereotypes and assumptions. For example, many youth blamed AIDS victims’ immoral behavior for their illness, but they also advocated condom-use over abstinence and monogamy.

**Expert opinion**

The literature search yielded a few opinion articles published in academic venues by experienced researchers in the field. Such pieces provide readers with highly informed perspectives on issues in a relatively brief and readable format. Their obvious weakness is that such texts do not offer the same level of support as peer-reviewed research articles, making it difficult to assess their arguments. While broad prescriptions without adequate support are common in research articles on condom-use, their format makes this disconnect more obvious.

Two pieces published in *Anthropology News* exemplify expert-opinion articles. Feldman (2003) wrote in opposition to the anti-condom approach associated with Edward Green (e.g. Green et al. 2013). Feldman acknowledged that HIV incidence did drop initially because, out of fear, Ugandans reduced risky partners before condoms were commonly available. Then, as their fear subsided, they used condoms. Feldman argued for ethnographically-based social marketing of condoms, for tailoring campaigns to different segments of any population, and for engaging with traditional healers. Although he clearly was an expert in this field, he cited almost no details to support his account.

Fissell and McKay (2004) did not address condom-use but made the point that traditional healers — who apparently were professionalizing in Uganda — were a common resource for urban and rural Ugandans. So Fissel argued, like Feldman, that they should be involved in other health professionals’ efforts. It is a small step to conclude that they might be involved in promoting and distributing condoms.
Acknowledgments

The original research for this study was funded by the Monitoring and Evaluation of Emergency Plan Progress – Phase II (MEEPP II) project using funds from the United States Agency for International Development (USAID) and President’s Emergency Plan for AIDS Relief (PEPFAR) under the terms of USAID/Social & Scientific Systems (SSS) Contract No. AID-617-C-10-00008. The contents do not necessarily reflect the views of USAID or PEPFAR.

Souleymane M L Barry, Sarah Nabukera, and others at Social & Scientific Systems set the scope of the review and provided comments on earlier drafts.
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