Risky Business:
Condom failures as experienced by female sex workers in Mombasa, Kenya

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Abstract

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Background: Limited research exists about condom failure as experienced by female sex workers (FSW). We conducted a qualitative study to examine how FSW in Mombasa, Kenya contextualize and explain the occurrence of condom failure.

Methods: In depth, semi-structured interviews were conducted with thirty FSW in Mombasa, Kenya, to ascertain their condom failure experiences. We qualitatively analyzed interview transcripts to determine how the women mitigate risk and cope with condom failure.

Results: The women commonly experienced condom failure but mitigated the risk by learning to use condoms and supplying and applying condoms. Many FSWs felt that men intentionally rupture condoms. The women widely felt incapable of preventing HIV, STIs and/or pregnancy after condom failure.

Conclusions: Research is warranted to determine condom failure frequency and male experiences. Interventions to equip the women with strategies for minimizing the risk of HIV, STIs, and pregnancy in the aftermath of a condom failure are justified.

Specific Aims:

This study aims to answer the following research question:

How do female sex workers in Mombasa, Kenya, explain and contextualize condom failure?

Related to the broader research question, the researcher has two specific aims:

1. Describe how the women mitigate the risk for condom failure
2. Detail how the women cope with condom failure.

The question will be answered through an analysis of transcripts from one-on-one, in depth, semi-structured interviews that were conducted with thirty female sex workers in Mombasa, Kenya, in 2006.

This study aims to fill a gap in our knowledge about the experiences of the women as it pertains to condom failure.

Background and Significance:

Mombasa, Kenya, a coastal port city, is an important economic center for Kenya and the region.[1] Depending on the season, between 2,000 and 18,000 female sex workers serve clients in bars, hotels, clubs, and private homes.[1–3] Female sex workers in Mombasa, as elsewhere, face an occupational risk of human immunodeficiency virus (HIV) and sexually transmitted infections (STI). Estimates of HIV prevalence among Kenyan female sex workers range between 24% and 47%, which is considerably higher than the 5.6% estimate of the national adult prevalence.[4–6] Sex workers and their clients account for 14% of new HIV infections in Kenya.[7] Many studies

about HIV and STI prevention and treatment have been conducted with the female sex worker population in Mombasa. For example, a 2005-2006 study enrolled 820 female sex workers to explore the association between HIV and the human papillomavirus.[1] Another study conducted in the suburbs of Mombasa in 2001 with 503 female sex workers measured the prevalence of several STIs, including HIV, and sought to describe health-seeking behavior in terms of STI treatment. [8] Other research has investigated topics including anal sex as a driver of HIV infection, the connections between HIV and STIs, the effect of antiretroviral treatment on sexual risk taking, the association between self-reported sexual behaviors and biological markers, the impact of violence on the HIV epidemic, and the effect of vaginal washing on HIV risk.[5,6,9–14]

Correct and consistent condom use reduces sexual risk for transmission of HIV and other STIs. As such, condoms represent a key element in HIV and STI prevention efforts.[15] Several studies have highlighted aspects of condom use among female sex workers in Mombasa. For example, one study examined sexual risk taking and the different levels of condom use with emotional partners compared to regular, casual, and/or paying partners of female sex workers.[2] The research indicated that sex workers were more likely to use condoms with regular and casual partners than with emotional partners. An additional study focused on changes in condom use after a five-year peer education intervention among 508 female sex workers. [16] The study found that women who received peer education messages were more likely to use condoms with their clients than were women who did not participate in the peer education intervention.

Condom failure occurs across populations worldwide and permits transmission of HIV and STIs, as well as unplanned pregnancies.[17] Condoms have an annual contraceptive failure rate of approximately 2% with “perfect” use. However “typical ” users can expect annual contraceptive failure rates of up to 15%.[18–20] Correct and consistent condom use must be employed for the

prevention of HIV and STI transmission as well. HIV transmission occurs in less than one percent of heterosexual HIV discordant couples each year who use condoms correctly and consistently; for inconsistent users the transmission rate increases to 4.8% annually.[18,21–23] Combined condom failure rates, including breakage and slippage, are between 1.3-3.6%. during a single, typical use.[22,24] Condom failure can be due to a lack of space at the tip, trapped air at the tip, upside down application, use of oil-based lubricants, incorrect withdrawal, and completely unrolling the condom before application, or the use of sharp objects to open the packaging.[17,25] Condom failure rates drop with proper education and user experience. Female sex workers often experience a lower rates of condom failure than other users.[22,25–27] Nevertheless, closing the gap between "typical" and "perfect" condom use is of the utmost importance for HIV and STI control.

Condom failure among the female sex worker population in Mombasa has not been explored despite extensive HIV, STI, and condom use research conducted with the population. Understanding the experiences of female sex workers with condom failures and the context in which failures occur could facilitate interventions to increase successful condom use and mitigate the undesirable effects of condom failure. Our study aims to address this knowledge gap by conducting a secondary analysis of qualitative interviews with female sex workers in Mombasa, Kenya, about their experiences with condom failure.

Methods for Analysis:

A Kenyan Social Scientist conducted thirty in-depth, semi-structured interviews between June and August 2006. The participants were recruited from an open cohort of 2,329 female sex workers established in 1993 to study risk factors for HIV aquisition[28]. The 30 women reported

exchanging sex for cash or in-kind payment. Women in the cohort had monthly medical visits with HIV and STI testing, and a physical examination. Treatment for STIs was provided when they were identified. At each monthly visit, cohort participants were also interviewed about their risk behavior and were offered risk-reduction education and free condoms. Women infected with HIV received comprehensive care following guidelines established by the Kenyan Ministry of Health. For this qualitative study, participants were recruited from among approximately 900 women in active follow-up in 2006. All cohort participants who presented to the clinic were given information about the study and invited to participate. Enrollment was stratified to include 10 HIV positive women on ART, 10 HIV positive women who were ART-naïve, and 10 HIV negative women. Recruitment continued until each stratum was complete. The stratification was an important element to the initial study but did not factor into the analysis for the secondary analysis.

The one-on-one interviews were audio recorded, then transcribed and simultaneously translated into English. Interviewees were asked open-ended questions about their attitudes, beliefs, and knowledge regarding HIV, ART, sexual risk behaviors, prevention strategies, gender relations, and health education sources.[28] The main finding was that ART use was neither a barrier or facilitator of safer sex practices.[28]

The participants responded to questions specifically about their experiences with condoms and the occurrence of condom failure. This study re-visits the transcripts to conduct a critical and in-depth examination of the women's experiences with condom failure. The Institutional Review Board at the University of Washington determined that this thesis project does not require a

human subjects review, as the data do not contain any information that could link the transcripts to individuals. They have provided a letter to this effect (see Appendix).

In combination, the social cognitive models of Ajzen and Fishbein, and Bandura, which guide this analysis, focus on intention as a determinant of a particular behavior, in this case the management of condom failure (Figure 1).[29–32] The theory of reasoned action/planned behavior, articulated by Ajzen and Fishbein, positions individual attitudes, subjective norms, and beliefs about one's control of a situation as immediate predictors of the intention of behavior. The theory considers the relative norms and expectations of social groups as influencers of behavior.[32–34] The Bandura model emphasizes the importance of modeling for learning and behavior acquisition and a self-confidence that the behavior can be performed.[32–34] An element of perceived control and self-efficacy to perform a behavior influence the Bandura and reasoned action/planned behavior theories.[33] In this case, for example, condom education and access could increase the perceived control. The context, in this case sexual intercourse with male partners, operates throughout the model and influences each element of the model.[34] Given the context, control over how condom failures will be dealt with can be mediated by external factors including the intentions of the male partner.[32,34] The application of this model highlights areas where behaviors can be changed or ways in which attitudes and perceptions can be modified.

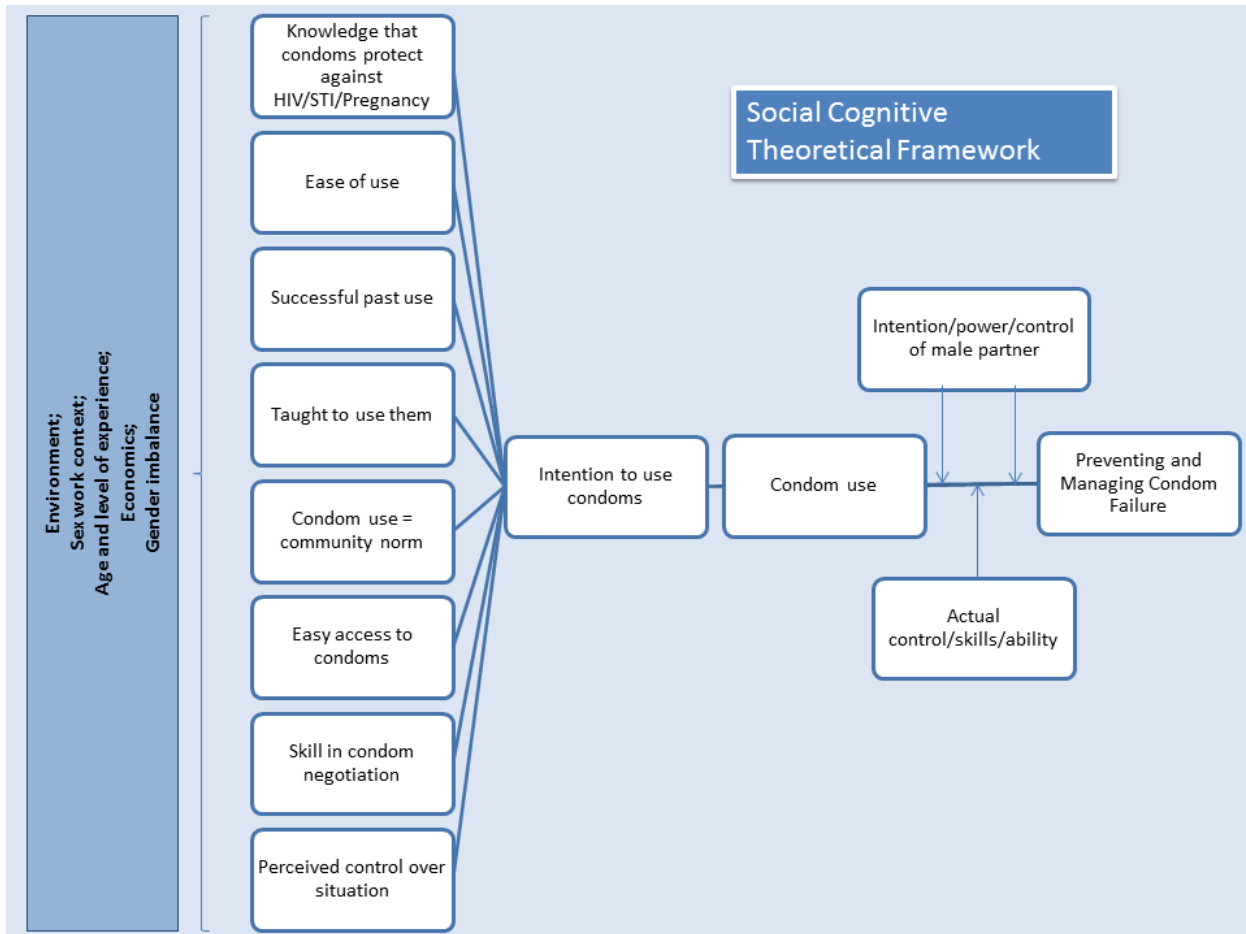

Figure 1: Social Cognitive Theories Conceptual Framework

Through a standard iterative, in vivo process, an initial codebook was developed during the first reading of the thirty transcripts.[35] In vivo coding was appropriate given that this research was exploratory in nature and asked new questions of data collected for another study. The codebook includes codes that address the attitudes of women towards condom use, their condom education, as well as facilitators and barriers to condom use. As the transcripts were read, the codebook was revised to include standard code definitions and inclusion/exclusion criteria. The codebook was updated as new themes emerged during the coding process. The researcher used ATLAS.ti to thematically code the transcripts (Scientific Software Developments, Berlin, Germany, 1997).

In addition, a Kenyan Social Scientist familiar with these data and with skills in qualitative research reviewed the coding applied to six transcripts. The codebook and code application were further standardized and refined. The thirty transcripts were coded with the same standards.

After completion of the coding, data were analyzed using a content analysis approach.[36] The codes were summarized and their application across transcripts was analyzed for similarities and differences and assessed relationships between codes.

The researcher focused on the ways in which women describe their condom education and the instances where condoms broke. A series of factors including behavioral, normative, and control beliefs contribute to successful condom use. As such, the social cognitive theories were appropriate theories to guide the analysis.[34]

Results:

Most participants in this study were part-time female sex workers residing in Mombasa. The women were self-employed with small commercial ventures including sales of clothes or food, or work in a bar or lodge. Many of the women reported that they exchange sex for money to supplement their incomes. Most of the women were single and lived with their children, though many also reported that they had a regular partner. The experiences with condom failure did not vary significantly between the three stratums of participants. Their experiences with condom failure were conceptualized according to the analytical framework in three segments: before the condom broke, during breakage of the condom, and after condom failure. Several themes emerged during the analysis as are highlighted in the table below:

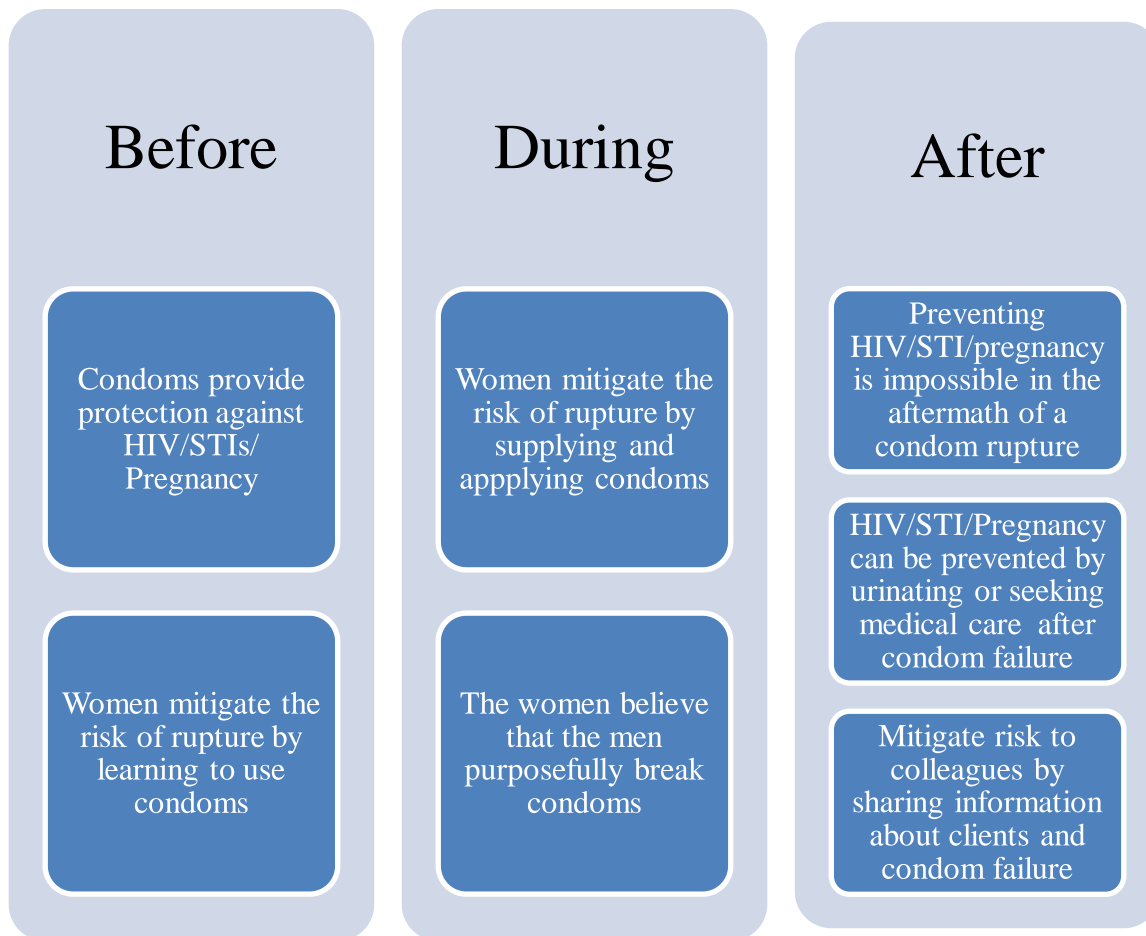

Table 2: Major analytic themes

Before:

The social cognitive framework asserts that intention is the greatest predictor of behavior. Individual attitudes, subjective norms, and beliefs about one's control of a situation are immediate predictors of the intention to behave in a certain way.

In line with the framework, the women generally viewed condom use favorably despite experiences with condom failures. A few equated the use of condoms to being "enlightened." Another stated, "I personally feel nice when I use a condom because my mind is relaxed. I don't think at the back of my mind this man could be sick. So then, all of my mind is in that. But if I

do it without a condom, for me, I don't enjoy because in my heart I am thinking, 'Ah, maybe this man is sick, and he has only given me 200 what is it for?" (36 years old, HIV-positive). Essentially, and as a key theme to the analysis, the women equated condom use with protection from HIV and STIs. According to the model, their condom use behavior is cyclically reinforced: their positive attitudes about condoms and mostly positive experiences with using condoms reinforce future condom use.

Another key theme that emerged is that the women typically make several efforts to mitigate the possibility of condom failure. Many of the women described the ways in which they learned to use condoms and gain the technical skill necessary to successfully use them, mitigating the chance of a condom failure. They described learning on their own, from directions inserted into condom packages, from observation, or from staff at the clinic they frequent. The women also teach each other to use condoms, which reinforces the community norm for condom use. There is evidence of stigmatization of the women who have sex without a condom; they are characterized as careless with their lives, irresponsible, or greedy. For example, one women stated, "and you might find man saying 'here is the money and I am not using a condom' so a greedy woman will take the money and agree" (33 years old, HIV-positive). The women reinforce condom use with supportive behaviors, such as condom instruction and provision.

For the most part, the women trust in their skills and abilities to negotiate condom use despite many challenging scenarios. For example, at the bar, a client may agree to condom use, only to refuse later when the couple is in a private setting. Men may also assume intimacy or "trust", using these as reasons for requesting sex without a condom. If their continued negotiation skills fail, a few of the women describe ending the transaction to avoid having sex without a condom.

During:

The majority of women reported that they had experienced a condom break. This event signifies a loss of the ability to control condom use in their sexual encounters despite their preparations. One woman indicated "You know, condoms burst in many ways…I wondered, there are people who are cunning or young men who are cunning. Someone doesn't want (condom use) but he wants you. So you force him and he will say he will use it. Others use it. I don't know how he burst it. Even if you say you will put it on him yourself, he will make sure it bursts. Then you will wonder what happened. So you don't know if he punctured it so it burst. And for some, their blood is too hot. So he is so strong that when he gets in there he goes in with force so its bursts because of the heat. So it's true sometimes they burst. Because some you can see it wasn't his fault he even looks sad but it has burst" (30 years old, HIV-positive)

Along with the theme that emerged where women indicated that they learned to use condoms, the women generally distrust the condoms that their partners bring to the encounter. They widely indicated, as this woman did, "I don't trust a condom from a man. Maybe he has already pierced through it. When you ask for a condom, he already has his and yet he has already pierced through it" (26 years old, HIV-positive). Another woman said, "I have heard people talk of such cases, that there are people who pierce them at the tip. So someone like that knows he is not well because if you were normal and sane would you really puncture a condom knowing you are ok?" (28 years old, HIV-negative) As such, the women typically use the condoms that they bring themselves and confidently apply. Many of the women indicated that they put the condoms on to assure that it is done correctly and to limit the opportunity for him to pierce a hole in it. In addition, several of the women avoid certain sexual positions they deem "hot" and riskier for a condom rupture. Along that line, two women avoid turning off the lights and few

more avoided positions that would offer the man an opportunity, out of their eyesight, to puncture the condom. One woman said, for example, "I don't want him putting it on by himself. I will be the one. Or if he wears it himself the lights should be on…You know there are some that puncture the front then you feel he has it but he has already cut the front men have that behavior, I don't like them switching off the lights" (35 years old, HIV-positive). A few women indicate that after experiencing a condom break that they apply multiple condoms at a time to prevent breaking.

Largely, the women assume that if the men puncture the condom or purposefully break it that they are infected with HIV and/or STIs and wish to transmit it to her. "Maybe someone is sick and wants to infect you. Because someone who knows they are healthy would not puncture a condom" (28 years old, HIV-negative). Many of the women describe a loss of actual control where a client forces the condom to break despite her efforts to properly manage the encounter. As one respondent said, "I go with him and I will use a condom but some drunkards are so rough he will mistreat you and…some will even burst the condom… it's a life full of problems and this job we do has many tribulations"(36 years old, HIV-positive).

A few women said that they were able to tell when the condom broke during sex. One of them replaced the condom and one discontinued sex. Another woman indicated that "some don't care. Even if it's burst they still go on and will be forced to ejaculate inside" (30 years old, HIV-positive). For the majority of those who experienced a condom failure, they noticed upon withdrawal or, in some cases, the next day.

After:

A noteworthy theme emerged that indicated that the majority of the women indicated that preventing HIV, STIs, and/or pregnancy was impossible in the aftermath of sex where a condom failed. They used phrases such as, "I had nothing to do, I didn't do anything" and "there is nothing you can do". One woman said "So what can I do when such a thing happens? I will get pregnant. I never used to do anything" (28 years old, HIV-negative). Other women indicated that God controls what happens after a condom breaks. For example, a respondent stated "It's God who protects. You can go with that man and it bursts and he is infected and you will not be infected" (24 years old, HIV-negative)

Seemingly in opposition to the evidence that most women felt incapable of preventing HIV, STIs and/or pregnancy, another theme emerged that indicated that some of the women believe that HIV, STIs and/or pregnancy can be prevented with urination and/or a medical intervention. Several of the women indicated that urinating or cleaning the "dirt" immediately after condom break prevents pregnancy and/or STIs. "I really cried and went immediately to wash myself with soap but I really cried and said that God should forgive me because now what will I do" (31 years old, HIV-negative). Another woman felt both "stranded" and "scared" and feared "the disease" more than pregnancy because "you can care for the baby. You can do whatever you want" (22 years old, HIV-negative).

A few respondents indicated that a physical exam and/or testing for HIV and STIs were appropriate and a few reported that condom failure resulted in an STI or HIV. Three respondents knew of emergency contraception. One said that "if you don't want to get pregnant you remove it with that [emergency contraceptive]." She also indicated "that one doesn't protect completely but you try at least and pass urine. It helps," and that the emergency contraceptive does not remove "the dirt of AIDS" (24 years old, HIV-negative). Another HIV-positive woman knew

that emergency contraceptive was available at the emergency room but "there they don't want someone who was with a man then the condom burst. They want raped people. So you cannot do anything. You just sit." (35 years old, HIV-positive).

The final theme that surfaced in the analysis highlighted that a few women said that they inform their colleagues when men are particularly rough or puncture a condom to discourage their colleagues from taking those men as clients in the future. "It's when, like, in the bar the customers are many. So, when we see someone behaving funny and then we see that he wants a certain girl. And, then, later, we tell the girl this man's behavior isn't good" (31 years old, HIV-negative).

Discussion

This population of high-risk women clearly intends to use condoms, prepare themselves as such, and mitigate the possibility of failure as best as they can. They feel in control of condom use within their relationships, as evidenced by the fact that they are practiced negotiators who supply and apply the condoms. The women largely conceptualize condom failure as the fault of their partners, in that he either punctures the condom or engages in sex that would intentionally break it. In the aftermath of a condom failure, most of the women feel that there is nothing they can do to prevent HIV, STIs, or pregnancy.

The theoretical framework that guides this analysis assumes that certain behaviors fall outside of the complete control of the individual, as is the case with condom use. As predicted by the framework, some aspects of control of condom use may shift to the male partner due to his physical insistence. As such, the women explained condom failures in ways that laid the blame on the male partner and allowed them to expect successful future condom use. In addition, and

in line with the framework, the women established and reinforced a community norm in which condom use was expected. Women inform their colleagues of men who they thought pierced the condoms or engaged in sex that they believed was aggressive enough to puncture the condom. This finding is consistent with the results of a study conducted with female sex workers in Britian.[37] As a whole, they attempt to maintain a sense of personal responsibility for their own wellbeing and within their social group. If they felt responsible in any way for the failures, they might have expressed interest in revisiting their condom education or have abandoned condom use because of presumed future failure. However, neither of these themes emerged in our 30 interviews.

Consistent with other studies, we found that the exertion of violent power of men over female sex workers poses a significant obstacle to successful condom use and represents the women's loss of situational control.[6,37–41] The exchange of money "commoditizes" a sexual encounter which can give men the impression of the upper hand and perceived license to do as they wish; this interpretation of the accounts of the women is consistent with findings from research with female sex workers in Kenya.[6] An initial agreement about condom use does not always imply that condom use is under the control of the women or that condoms will actually be used.[38] The sex that the women described often included use of excessive force, which may have been enough to cause the condom breaks despite appropriate application.[24,42] Few women immediately noticed when the condom broke. In this setting, a small number of women reported insisting on the application of a second condom. For them, the condom failure represented another opportunity for condom negotiation and assertion of their control. Others did not immediately respond to their awareness of a condom failure during sex. However, some women

who experienced condom failure responded later by applying multiple condoms at the same time in future encounters.

Most of the women expressed a sense of helplessness in the aftermath of a condom failure. Several of the women contracted STIs and several more sought medical care in the aftermath of a condom failure. Emergency contraception was available in Mombasa at the time of the interviews, but few women mentioned it as an option.[43] One of the participants anticipated stigma related to acquiring emergency contraception. Her misgivings may be justified. In a 1996 study from Nairobi, medical providers stated that the wrong people (female sex workers) seek out and abuse emergency contraception.[43] The study also quoted providers stating that female sex workers are "immoral people who practice sex indiscriminately".[43] Family planning programs in Kenya ought to include emergency contraception and train providers on its use and on providing stigma-free medical care. Condom education and error correction at the time of HIV/STI testing and treatment, pregnancy testing, and dispensing of emergency contraception could reinforce positive behaviors and reestablish the expectation for condom success. Female sex workers could educate each other about condom use and reproductive health, eventually establishing a community norm around health-seeking behaviors in the aftermath of condom failure.[16,44–49]

Chief among the strengths of this study is that it sheds light on an aspect of the experiences of female sex workers that has not been previously studied in depth. The study design and semi-structured interviews provided an opportunity for the women to share their experiences in great detail.

This study has a number of limitations. The interviewees were recruited from a pool of women who were involved in a research cohort in which they received frequent HIV testing and risk-reduction counseling.[28] As such, they may have received more intense HIV and condom education than their peers who were not a part of the cohort. The interviews were also conducted during a relatively brief time period in 2006 and could have been influenced by cultural or political factors unique to that time period. However, we have worked with sex workers in Mombasa since 1993, and have not observed major shifts in culture, such as changes in levels of stigma, or in the laws that prohibit sex work (though it is widely tolerated) in Kenya. Despite these limitations, which could limit generalizability, many of the themes from this work may be applicable to female sex workers in Africa more broadly.

The onus of condom use for HIV and STI prevention must be equally shared between the female sex workers and their male partners, as men often have more power within the relationship.[40] Of course, the assertion that men purposefully puncture condoms and the violent behavior that they exhibit deserves further research attention and interventions for the protection of all parties involved. There are reports of men intentionally breaking condoms in other settings. In Nigeria, for example, female sex workers report that men intentionally puncture condoms as retaliation for being forced to use them.[50] A South African study cited female sex workers' claims that men break, remove, or apply oil to condoms to cause them to slip.[38] Existing HIV education campaigns must intensify condom education and particularly target the sexual partners of female sex workers.[2,38] Counselling men on proper condom use has worked in other settings to reduce condom breakage and slippage rates.[27]

Preventing HIV infection among female sex workers requires a comprehensive approach that includes structural, medical, legal, and community-level interventions. This study highlights the

need for individual-level interventions to build condom application and negotiation skills. It is the key implication for public health from this study. Given that the female sex workers have access to and intend to use condoms, and hold positive individual- and group-level beliefs about condoms, interventions must focus on achieving a level of "perfect" use with hands-on training where errors in application can immediately be corrected. Achieving a level of "perfect" condom use among Kenyan female sex workers could have a positive effect on HIV incidence country-wide.[51] Perhaps more significantly, this study indicates a need for future research to determine the frequency of condom failure experienced by female sex workers and their potential use of emergency contraception, post-exposure prophylaxis for HIV and STI treatment in the aftermath of condom failure.

Appendix 1:

Date: December 20, 2013

PI: Caitlyn Bradburn, Masters Student

Global Health

Re: HSD 46546, "Perceptions about family planning among Mombasa, Kenya, female commercial sex workers"

Dear Caitlyn Bradburn,

The Human Subjects Division received your determination request application on 12/16/2013. Your research activity described in the above-referenced application has been by reviewed by Subcommittee EJ.

As outlined in your application, the research activity will only involve the receipt and analysis of data that is not individually identifiable, as the data cannot be linked to specific individuals by the investigators either directly or indirectly through coding systems. Information in your application indicates that:

(1) The private information or specimens were not collected specifically for the currently proposed research project through an interaction or intervention with living individuals;

and

(2) The link between participant identities and data has been destroyed and the interview transcripts have been de-identified.

Given this information and the definition of "human subject" under 45 CFR 46.102(f), the research has been determined to not meet the federal regulatory definition of "human subjects research". Therefore, you do not need IRB review and approval to perform your activities. Please keep this memo and a copy of your returned application for your records.

If you have further questions or concerns, feel free to contact me by email at hrieck@uw.edu or by phone at 206.543.0098.

Best regards,

Heather Rieck Review Coordinator Human Subjects Division

4333 Brooklyn Ave. NE, Box 359470 Seattle, WA 98195-9470

main 206.543.0098 fax 206.543.9218 hsdinfo@u.washington.edu
www.washington.edu/research/hsd

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