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"*There was no condom to fit the guy's penis*": Sex Workers' Perceptions of Male Condom Size in Cape Town, South Africa

By

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MPH, Global Health

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Monique Hennink, Ph.D
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"*There was no condom to fit the guy's penis*": Sex Workers' Perceptions of Male Condom Size in Cape Town, South Africa

By

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B.A. International Affairs
The George Washington University
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2006

Thesis Committee Chair: Monique Hennink, Ph.D

An abstract submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health in Global Health
2014

Abstract

Background: South Africa bears one of highest rates of HIV in the world, with 18.8% of South African adults between the ages of 15 and 49 reported as being HIV positive. Sex workers are considered an at-risk, vulnerable population who continue to bear a high burden of HIV in South Africa. Female, male and transgender sex workers engaged in the sex industry continue to face barriers to increased condom use in sexual encounters with clients.

Objectives: To understand condom use practices amongst female, male, and transgender sex workers and their clients, this study explored condom use amongst sex workers through the perspective of sex workers in Cape Town, South Africa. The study further examined sex workers' perceptions on the need for expanded condom size options to increase condom use in the sex work industry and whether expanding condom size options might increase condom use amongst sex workers and clients.

Methods: In-depth interviews were conducted amongst 20 female, male, and transgender sex workers affiliated with SWEAT as peer educators who identified as sex workers or former sex workers.

Results: Irrespective of gender, sex workers reported experiencing issues with limited condom sizes that fail to fit the wide variation of penis sizes on the part of clients. Sex workers reported that condom size serves as a barrier to consistent condom use with clients, and indicated that this puts them at increased risk of negative health outcomes including disease acquisition and unintended pregnancy. Condom failure is a common occurrence amongst sex workers. Sex workers expressed interest in the diversification of condom sizes and believe that increasing the variation in male condom sizes would encourage clients to reevaluate their decisions to use condoms.

Discussion: Condom size is a barrier to increased condom use amongst sex workers and clients. Experiences of condom failure expose sex workers and clients to adverse health risk, often resulting in inconsistent use or aversion to condoms on the part of clients. There is a need for continued research on how condom size diversification could alter the way people perceive condoms and the consistent utilization of condoms within the context of sex worker-client relationships.

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To the sex workers who participated in this study, I would like to express my deepest thanks and admiration for sharing your personal experiences in the hopes that your contributions can help make the sex work industry safer for your peers.

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Chapter One: Introduction

The Global Sex Work Industry

The global population of sex workers is one of the most at-risk populations for transmission of HIV and other sexually transmitted infections. The burden of disease remains disproportionately high amongst sex workers as governments implement new health interventions to combat new HIV infections. Globally, HIV prevalence and new HIV infections have declined in recent years as a result of increased access to anti-retrovirals, expanded access to condoms and education about HIV prevention and condom usage, and public health interventions to prevent new infections.

While there is a global reduction in new HIV cases and HIV-related deaths, at-risk populations, including commercial sex workers, continue to share a disproportionately high burden of new HIV and STI infections. A 2012 meta-analysis examining 102 surveillance reports and scientific articles estimated that the overall global prevalence of HIV amongst female sex workers is approximately 11.8% (95% CI 11.6%-12.0%) (Baral et al., 2012). Sub-Saharan Africa accounts for the highest regional prevalence, with 36.9% of female sex workers reporting positive HIV serostatus out of an estimated sample population of 21,421 sex workers. While sex workers are at a disproportionate risk of acquiring HIV, the 2013 UNAIDS Global Report noted that HIV prevention programs targeting sex workers are inadequately underfunded (UNAIDS, 2013). In addition to programmatic deficits, the criminalization of sex work in countries across the world precludes sex workers from accessing vital health and HIV prevention services.

Sex workers are exposed to a multitude of risk factors that increase their lifetime probability of acquiring HIV through their work. A study published in 2001 found that female sex workers are 13.5 times more likely to acquire HIV than females in the general population between the ages of 15 and 49 (Morrison et al., 2001). The continued high levels of HIV infection amongst female sex workers and the high probability of acquiring HIV while engaged in sex work suggests an urgent need for new strategies, policies, and interventions that address continued barriers to safe sex amongst sex workers and their clients.

One of the biggest barriers to reducing the burden of new HIV infections amongst sex workers is consistent use of condoms. Research into condom use amongst sex workers and barriers to condom use amongst this at-risk population has indicated that multiple individual, social, and partner-specific factors often contribute to non-condom use amongst sex workers and their partners (de Graaf et al., 1993; Ghimire et al., 2011; Jie et al., 2012; Richter et al., 1995). Additionally, the increasing presence of male and transgender individuals engaged in sex work poses new challenges for public health practitioners aiming to promote condom use as a means of HIV and STI prevention. To date, there has been minimal research or public health interventions focused on male and transgender sex workers and behaviors that place them at risk of disease acquisition. Despite the prevalence of HIV amongst sex workers in countries around the world, health intervention coverage and health services remain low for sex workers, and in particular, men who have sex with men and transgender persons.

Sex Work in South Africa

According to the 2012 South African National HIV Prevalence, Incidence and Behaviour Survey, 18.8% of South African adults between the ages of 15 and 49 are HIV positive (Shisana, et al. 2014). Female sex workers bear a high burden of HIV in South Africa and are a high-risk population. In three separate studies conducted in Kwa-Zulu Natal, Johannesburg, and Cape Town, reported HIV prevalence rates of 46.4%, 59.6%, and 34% respectively amongst women who identify as sex workers (Fraser et al., 2011). The high prevalence among female sex workers has proven to result in an increased risk of HIV amongst male clients (Fraser et al., 2011). A 2008 study conducted by the Human Sciences Research Council found that men who reported visiting sex workers were 2.9 times more likely to be HIV-positive, based on multivariate analysis (Fraser et al., 2011). This coincides with a study conducted in Cape Town that found that nearly a third of men surveyed reported engaging in transactional sex (Jewkes et al., 2008).

Data collected to date is limited to female sex workers, with little focus given to the growing presence of male and transgender persons who engage in sex work in South Africa. Although South Africa is considered the most progressive African country in terms of acknowledging the rights of gay and transgender individuals, these groups remain underserved, underrepresented, and at-risk for continued stigmatization and isolation within the larger South African population. As a result of cultural and societal attitudes and perceptions towards these groups, many gay males and transgender individuals find themselves forced into sex work in the absence of other employment options. Given their growing presence in the South African sex work industry, their particular health needs and the needs of their clients need greater attention and tailored public health interventions. In particular, condom usage amongst gay and transgender sex workers has

not been a subject of academic research to date. As a result, condom usage practices amongst this group of sex workers are relatively unknown.

Condom Size as a Barrier to Condom Use

Studies have indicated that condom errors, including inconsistent condom use, occur frequently and reduce their effectiveness (Sanders et al., 2012). A critical aspect of condom usage that is under-researched is the influence of condom size and fit on non-use and condom failure amongst sex workers. The fit and feel of male condoms is one of the most significant variables affecting consistent use (Reece et al., 2009). Men who report poor condom fit are more likely to report condom errors, including breakage and slippage, as well as erectile dysfunction, problems with sexual performance and maintaining an erection, and reduced sexual pleasure for both partners. Most male condoms are produced in a limited range of sizes and the available widths between standard condoms and large condoms vary by less than 10%, which is substantially less than the known variability of penis sizes (Smith et al., 1998; Richters et al., 1995).

A study conducted in the United States found that male condom breakage and slippage was lower in men who used fitted male condoms specific to their individual penile dimensions than men using standard size male condoms (Reece et al., 2008). In light of these findings, some researchers and clinicians have called for a wider range of condom sizes to meet the varying penile dimensions of condom users (Cecil et al., 2010). To date, few studies have compared the success of fitted versus standard male condoms in terms of increasing condom acceptability and decreasing condom failure. At present, there is a dearth of published research in South Africa

evaluating men's interest in fitted male condoms, as well as the feasibility of offering fitted male condoms in public health care facilities and amongst sex workers.

Custom-Fitted Male Condoms

In 2011, a brand of condoms called TheyFit launched in the United Kingdom. Attempting to revolutionize condom usage, TheyFit offers custom-fitted male condoms that are available in 95 different combinations of lengths and widths. While traditional condoms are available in lengths between 178mm to 205 mm and girths between 49 to 56 mm, TheyFit sells condoms in an expanded number of sizes. Custom-fitted male condoms are available in lengths ranging from 41 mm to 69 mm and widths ranging from 80 mm to 240 mm. Initial sales of the condoms found that only 12.4% of sales were for standard condom sizes that fall within the acceptable range of sizes permitted by the American Society for Testing and Materials, the regulatory body that overseas condom manufacturing standards (Cecil et al., 2013).

Although they have not been approved in the United States, custom-fitted male condoms have been available for internet sale in Europe since 2011 (Cecil, 2012). A presentation at the 2012 International AIDS meeting found that European men who purchased condoms from an expanded array of sizes only chose a size currently available in the United States 12% of the time (Cecil, 2012). South Africa relies on the same condom sizing standards that limit the range of sizes as in the U.S., making condom sizes similar between the two countries. For example, the condoms used for free distribution by the South African government are 52 mm wide. South Africa does not have their own regulatory body that governs condom quality, so most

manufacturers looking to market condoms in South Africa seek the CE certification mark from the European Union and/or FDA approval (Choice Condoms, N.D.).

Research Question

To understand condom use practices amongst female, male, and transgender sex workers, and their clients, this study explored the context of condom use amongst sex workers through the perspective of sex workers in Cape Town, South Africa. The study further examined sex workers' perceptions on the need for expanded condom size options to increase condom use in the sex work industry and whether expanding condom size options might increase condom use amongst sex workers and clients. Questions explored include:

- What are the perceptions of male condoms amongst female, male, and transgender sex workers, and their clients?
- What are the experiences of condom failure (condom slippage and breakage) amongst sex workers, and how do these experiences affect condom use with clients?
- How do sex workers perceive the possible introduction of fitted male condoms into the sex work industry affecting condom use between sex workers and clients?

Study Purpose

These questions were designed to explore whether the introduction of custom-fitted male condoms amongst the sex worker population would affect condom usage between sex workers and their clients. Examining existing perceptions of condoms and experiences of condom failure amongst female, male and transgender sex workers will inform researchers and professionals about the need for expanded condom options to accommodate the physical dimensions of males

currently using condoms and those who continue to engage in sex without condoms. To date, limited research has been conducted and published on condom size as a barrier to increased condom usage between sex workers and their clients.

Chapter Two: Comprehensive Literature Review

Introduction

The aim of this literature review is to synthesize existing research on barriers to condom use amongst sex workers, as well as existing research on condom fit and feel, and how it impacts condom use. Given that research on condom size as a barrier to condom use is an under-researched subject, there is limited research on how limitations in condom size options affects condom use amongst sex workers and their clients.

The literature review is divided into five sections:

- The first section presents studies that examine various barriers to condom use amongst sex worker communities in different countries around the world.
- The second section examines research around condom discomfort, issues with the fit and feel of existing male condom options, and research regarding occurrences of condom failure. This section also highlights research that examines loss of sexual pleasure related to condom use and how it affects condom usage.
- The third section introduces existing research on condom failure amongst vulnerable populations, including the few studies that focus on female sex workers and men who have sex with men.
- The fourth section examines research around condom use and the sex work industry in South Africa to provide context for this study.
- The final section highlights gaps in the literature published to date, reinforcing the need for a study on perceptions of existing condom options and condom size as a barrier to condom use.

Barriers to Condom Use amongst Sex Workers and Partners

Casual Partners versus Steady Partners

The majority of research surrounding condom use amongst sex workers focuses primarily around condom use in a professional setting and does not address condom use amongst sex workers and partners who they identify as permanent partners. A 1997 study conducted amongst female sex workers in Durban, South Africa was the first of its kind in that examined the dichotomy of condom use amongst female sex workers in their professional and personal spheres to examine socio-cultural and ideological factors influencing condom use based on relationship type (Varga, 1997). The study consisted of 45 in-depth interviews, 100 questionnaires, 2 focus groups, and participant observations across an inner city site in Durban and an industrialized suburb of Durban.

Participants reported a low level of condom use with all paying clients, with 29% of respondents at the inner city site indicating 100% condom use with clients and 14% of respondents at the suburban research site indicating 100% condom use with clients. A higher proportion of sex workers reported sporadic condom use, with 71% of city sex workers reporting that they usually use condoms with clients and 80% of suburban sex workers reporting that they usually use condoms in their profession. Sex workers from both sites indicated financial incentives were the primary reason for non-condom use. In situations where sex workers experienced a low number of clients to meet their financial needs, sex workers indicated that they were more likely to consider non-condom use in exchange for a higher fee from clients.

Sex workers also indicated that consistent condom use with regular clients was not always observed due to a fear of losing the steady income from repeat clients. In contrast to high condom use with clients, nearly all participants rejected condom use with personal partners, with 96% of participants reporting never using condoms with non-transactional sex partners. In addition to their protective nature, sex workers viewed condoms as a barrier that separates their professional life from their personal life. Condoms were viewed in relation to the unpleasant sexual situations experienced by sex workers in their professional life and were thus perceived as incongruent to their normal, personal relationships and the maintenance of trust, commitment, and intimacy with their partners in their private lives.

Condom Negotiation and Condom Refusal

Studies have been conducted around the world to examine the ability of women to negotiate condom use with partners and the effects of limited agency on increased condom uptake. A 2010 study conducted in Nepal examined non-condom use amongst female sex workers and their different types of sexual partners (Ghimire et al., 2011). Researchers conducted in-depth interviews with 15 female sex workers between the ages of 15 and 45 who indicated that they were engaged in sex work during the six months prior to the study. The study found that the biggest barrier to condom use amongst paying clients is client refusal, with 11 out of 15 sex workers indicating that they did not use a condom during last sexual transaction with a paying client due to client refusal. The sex workers attributed clients' refusal to use condoms to complaints that condoms reduce sexual pleasure on the part of the client during sex. Participants indicated that they had limited agency to negotiate condom use, with the majority of sex workers reporting that they only used condoms if the client insisted upon it. The sex workers

unanimously reported that they never used condoms with boyfriends or husbands unless they were for family planning purposes. Participants indicated that they were powerless to encourage condom use with their husbands, even in instances where the sex workers were engaged in a permanent relationship with an HIV positive partner.

While condom use negotiation is less of a barrier in the context of areas where sex work is legally regulated, resistance to condom use persists amongst clients. A study conducted in 1995 amongst legal brothels in Nevada found that in spite of mandatory condom laws, sex workers employed at brothels continue to receive clients who are reluctant to use condoms (Albert et al., 1998). During this study, 40 licensed sex workers reported that of 3,290 clients seen in the month prior to the study, 90 clients initially refused to use a condom. Of these 90 clients, 65 clients eventually agreed to wear a condom for vaginal intercourse while 11 clients opted to receive non-penetrative sexual services without condoms and 14 clients left the brothels without being serviced. In instances of resistance to condom use from clients, 60% of sex workers indicated that they would offer non-penetrative sex acts without condoms as an alternative to vaginal intercourse. Sex workers were able to retain 84% of clients initially resistant to condom use. Overall, a 2.7% condom refusal rate is relatively low but is not completely unexpected given the legal obligations to use condoms in Nevada brothels.

A study of risks of HIV infection in the sex industry in Scotland examined 300 variables elicited from 209 clients of sex workers who participated in interviews (Thomas et al., 1990). Of clients interviewed, only 121 reported requesting to use condoms for either vaginal or anal intercourse. A third of clients reported that they refused to use condoms with male sex workers, while one in

eight clients refused to use a condom with female sex workers. Clients who insisted on non-condom use with sex workers were more willing to pay higher rates for sex without a condom, with a third of clients surveyed indicating they engaged in higher payment for unprotected sex.

Cultural Barriers

A 2011 study conducted amongst female sex workers in Guangzhou, China, aimed to explore barriers to condom use amongst female sex workers between the ages of 18 and 32 (Jie et al., 2012). Researchers conducted 24 qualitative interviews with sex workers, utilizing a purposive sampling technique. Data analysis found a variety of factors contributing to low rates of condom use amongst sex workers, including societal and cultural understanding of the concept of trust, socioeconomic stereotypes and perceptions of socioeconomic status, and individual factors such as financial situation of the sex workers. An unfounded trust towards clients was identified as one of the biggest barriers to condom use amongst participating sex workers. Participants demonstrated a naïve willingness to trust men who claimed disease-free status, hoping to gain their trust and continued patronage. Sex workers non-condom use also increased with repeat clients who became regulars, with 12 out 24 participants indicating cessation of condom use with clients with whom they developed ongoing relationships.

The sex workers also relied on self-perceived socioeconomic status of their clients, making decisions about condom use with clients based on appearance and perceived social status of clients. Female sex workers indicated that they could tell the health status of a potential client based on their appearance and they associated poor, dirty clients with a higher probability of harboring an STI or HIV. Participants reported that they were more inclined to insist on using

condoms with clients whom they perceived to be diseased. It is possible that the reduced likelihood of a client being able to negotiate condom-less sex due to lack of funds provided a greater sense of agency on the part of the sex workers to insist on condom use.

This same sentiment was exhibited by Nepalese sex workers interviewed in 2010 about non-use of condoms with clients and permanent partners (Ghimire et al., 2011). The Nepalese sex workers expressed the belief that wealthy clients or familiar regulars are trustworthy and safe, and that they do not have HIV or other STIs. In this study, the sex workers indicated that they assessed the safety and trustworthiness of clients based on personality, offered payment, personal appearance, and education level. Perceived socioeconomic status of potential clients on the part of the sex worker determined whether they pursued condom usage as part of a transactional sex negotiation.

Financial Barriers

The 2011 China study identified financial constraints as a catalyst for entry into the sex industry and a barrier to condom use amongst sex workers (Jie et al., 2012). Female sex workers participating in the study almost unanimously (23 out of 24) indicated that financial desperation was the primary motivating factor behind their decision to enter the sex industry. Participants indicated that clients mainly decided whether or not a condom was used during a sex transaction, and often times clients would be willing to pay for pleasure by paying a higher fee for condom-less sex. The study findings astutely identified financial need as the primary barrier to increased condom use, as women who engage in sex work often do so out of financial desperation and are

therefore not in a financial position to refuse sex without a condom as a result of their desperation.

Legal Landscape and Persecution of Sex Workers

One of the biggest barriers to condom use amongst sex workers and clients is the criminalization of prostitution in many countries around the world. Sex workers often times face harassment from law enforcement officials, are subjected to unlawful search and seizure, and face physical and sexual abuse at the hands of police and security forces. The Nepal study that examined non-use of condoms amongst sex workers and their sexual partners based on relationship type highlighted police harassment as a barrier to condom use (Ghimire et al., 2011). There is a perceived threat on the part of sex workers that security forces or police officers will arrest them and jail them if they are identified as sex workers. Women interviewed discussed police raids for condoms and reported that women who are found with condoms on their person are arrested and charged with prostitution. As a result, many sex workers indicated that they no longer carry condoms when seeking clients due to fear of police persecution and potential negative legal ramification. This places the impetus for condom use on the client and forces female sex workers into situations where they are unable to negotiate safe sex because there are no condoms available.

Loss of Pleasure, Condom Discomfort, Condom Failure

Loss of Pleasure Associated with Condom Use

Research around the fit and feel of condoms and associated discomfort has often highlighted loss of sexual pleasure, arousal or sexual stimulations as the result of perceptions of ill-fitting

condoms on the part of the wearer. An internet-based survey conducted between 2004 and 2005 surveyed 3,210 women and 2,399 men to examine loss of sexual arousal as it relates to condom use and perceived risk of unplanned pregnancy (Higgins et al., 2009). Results found that 34% of all study participants reported loss of sexual arousal due to use of condoms and other safer-sex products. Participants who indicated reduced sexual arousal as a result of using condoms were more likely to have had unprotected sex in the 12 month period prior to the survey. This indicates that loss of pleasure is an important factor in the decision-making process on whether or not to use a male condom.

An exploratory study conducted in the United States in 2006 examined condom associated "turn-offs" amongst 464 individuals who reported being turned off by using condoms during last reported sexual encounter (Crosby et al., 2008). The study identified that amongst all participants, one in four reported that condoms had caused them to be either psychologically or physically turned off, resulting in reduced pleasure. Irrespective of demographic characteristics, the most common turn offs associated with condom use were that "condoms just don't feel right," "condoms decrease my sensation," and "condoms decrease my partner's sensation." While these were reported as major turn offs to using condoms, both male and female participants also reported using these turn offs to persuade sexual partners to not use condoms. The results of this study emphasize the need to balance the perceived protective value of condoms with the loss of physical sensation when designing health interventions and promoting increased condom use.

A 2008 study of university-aged students in the United States further examined sexual behaviors and condom use as they relate to pleasure ratings participants assigned to protected and unprotected acts of vaginal intercourse (Randolph et al., 2007). The study found that both men and women rated condom-less vaginal intercourse as being more pleasurable than protected vaginal sex. Men and women who reported using condoms during vaginal intercourse in the three months prior to the survey gave a more favorable rating to condom-protected vaginal sex than did male and female participants who did not report condom use in the same period. This study suggests that higher pleasure reported during vaginal sex with a condom is associated with increased likelihood of condom use for both male and female participants.

Condom Discomfort and Condom Failure

Much research has been conducted to examine barriers to condom use in low-income countries but there continues to be a dearth of information examining the intersection between penis size, condom use, condom failure, condom size options, and non-use as a result of discomfort due to size. Some of the earliest studies examining condom fit and condom failure examined male clients within health care settings in developed countries with earlier adoption of condoms as a preventative tool to prevent disease transmission.

A 1994 study of 540 male clients at four clinics in Wellington, New Zealand examined experiences of condom breakage and slippage via a prospective, observational study that utilized condom use questionnaires for each condom event experienced during a one-month period (Sparrow et al., 1994). In total, clients reported 3,754 condom events during the study period. Results indicated that respondents reported condoms as being too small on 278 of 3,754 reported

condom events (7.4% of all events), with 59 events resulting in condom breakage and 62 events resulting in condom slippage. Only 40 events reported situations where the condom was considered too large (1.1% of all events), resulting in breakage of four condoms and slippage of 14 condoms. The study found that condoms were more likely to break or slip if the client complained about the size of the condom being either too small or too large for their penis.

In a study of men attending a public urban STI clinic in the United States, 29.9% of the 278 participants reported experiencing problems with condom fit and/or feel within the three months prior to participation in the study (Crosby et al., 2007). In this study, participants completed a questionnaire to assess the prevalence of condom breakage and to identify demographic and other characteristics that could account for occurrences of breakage. The study found that 87 men reported breakage during at least one of their last three sexual encounters. Of the 834 penile-vaginal encounters counted in the study, breakage occurred during 125 sex acts, accounting for 15% of all sex acts. Those participants who reported problems of fit and feel when wearing male condoms were more likely to experience breakage. In the same study, condom slippage events were reported during intercourse and upon completion of intercourse, with 45 men reporting a condom slipping off during withdrawal and 40 men reporting condom slippage during intercourse (Crosby et al., 2008). This study's findings indicate that there may be an association between condom fit and experiences of condom failure, and in particular, condom breakage and slippage. In a similar study conducted in partnership with an organization providing health services for HIV positive men, 215 men were surveyed and 20.6% of men reported experiencing condoms that were too tight, while 15.9% reported using condoms that

were too short for their penile length and 17.8% of participants reported that condoms would not roll down the entire length of the penis shaft (Reece et al., 2010).

In a 2007 experimental crossover study utilizing web-based daily condom usage diaries, 820 men reported daily condom usage of both standard size male condoms and custom-fitted male condoms to determine failure rates for both types of condoms, and to measure the user's perceptions of each type of condom and there efficacy (Reece et al., 2008). While there was minimal variation in condom failure rates when penile dimension was not included as a contributing factor, clinical breakage rates were twice as high amongst standard male condom users who reported breakage (n= 35, 1.4%) than fitted condom users who reported breakage (n= 19, 0.7%). Larger penile circumference was associated with higher total breakage rates, with men with a penile circumference greater than 16 cm (n=206) using standard condoms reporting breakage rates five times higher (n=16, 2.7%) than counterparts who reported breakage while using fitted male condoms (n=3, 0.5%).

A cross-sectional study of condom use errors and problems experienced by university age students was conducted from February to May, 2003 (Crosby et al., 2005). Male and female students between the ages of 18 and 25 who reported using a condom at least once in the three months prior to the study were eligible. The survey included open-ended response questions regarding experiences with condom discomfort to determine the association between condom discomfort and three hypothesized outcomes: incomplete condom use, decreased motivation to use condoms, and condom breakage. Of the 206 participants, 194 students responded to the question assessing condom discomfort and 31.4% of respondents indicated a problem with the fit

or feel of condoms. Amongst male participants who responded to the discomfort question, 36% described condoms as being too tight and 30% indicated that condom use caused reduced sensation or pleasure during sex. Female participants included sentiments expressed by male partners regarding condoms, with 27% off females indicating their partners complained about condoms being too tight.

The data analysis via bivariate correlations identified a significant association between discomfort and experiences of condom breakage, incomplete condom use during sex, and a reduction in motivation to use condoms. Respondents that reported experiencing discomfort while wearing condoms had a higher occurrence of breakage, with four out of ten respondents reporting at least one incidence of condom breakage in the three months prior to the study. Those experiencing discomfort also had a higher rate of incomplete condom use, with six out of ten respondents indicating that they did not use a condom during the entire sex act. Less than 50% of respondents reporting discomfort responded that they were highly motivated to use condoms with future partners. This study's findings are significant, highlighting that discomfort and ill-fitting condoms may influence partners or couples to initiate and engage in sex without a condom or remove a condom before a sex act is complete.

Condom Failure Amongst Vulnerable Populations

Limited studies have been conducted to examine experiences of condom failure amongst high-risk populations, including sex workers and men who have sex with men. A study conducted in 1990 in the Netherlands examined the extent to which male condoms are effectively and correctly used, and to account for perceived causes of condom failure (de Graaf et al., 1993).

This qualitative study encompassed 127 interviews of female sex workers and 91 male clients over the course of a nine-month period. Study results found that female sex workers attributed condom failure to penile size, reporting that breakage was the result of large penile dimensions and attributing condoms slipping off the penis pre-ejaculation to small penile size. Sex workers and clients both expressed a need for male condoms in an expanded number of size options, with 3% of clients indicating a need for smaller, narrower condoms and 10% expressing a need for larger condoms with a wider circumference. Study participants reported a higher demand for condoms in different sizes, with 7% indicating a need for smaller condoms for their clients, 11% indicating a need for larger condoms, and 18% of sex workers reporting a need for condoms in smaller and larger sizes to meet the needs of their male clients.

Another study conducted in the early nineties examined condom use amongst female sex workers employed at legal brothels in Nevada in the United States (Albert et al., 1995). The study enrolled 44 women employed at three legal brothels in Nevada to participate in a two-phase study. The first phase consisted of a standardized interview to collect demographic information, medical and condom use history, and retrospective accounts of condom failure during previous week, month, and year prior to the study. The second phase was prospective in nature and required participants to complete condom evaluation forms for their next 10 condom uses with clients. Results of the retrospective phase found that breakage rates during the 41,127 vaginal intercourse events reported in the year prior to the survey were 0.14%, 0.19%, and 0.12% for the previous week, month, and year preceding the survey, respectively. Slippage rates indicated that slippage was a more common occurrence, with slippage rates of 0.81%, 0.91%, and 0.25% reported for the week, month, and year preceding the survey. The prospective phase

found that condoms were used for 353 acts of vaginal intercourse and 19 non-vaginal sex acts and that no instances of breakage or slippage during intercourse were reported.

In this study, condom breakage and slippage rates were negligible but must be interpreted with caution. Participants in this study conduct their business in an environment that is regulated and requires condom use with clients. In this context, sex workers consistently use condoms and are able to hone their condom usage skills to ensure correct condom use. Breakage and slippage rates reported in this study may not be generalizable to the sex worker population operating outside the legal brothel setting or to the greater population as a whole.

In 2011, a qualitative study was conducted amongst female sex workers in Bangalore, South India to examine factors that contribute to condom breakage with sex workers and their clients and non-paying partners (Bradley et al., 2012). Participants reported high levels of condom use, with 97% of participants indicating that they used a condom during their most recent sex act. Sex workers also indicated a high occurrence of condom breakage, with 61% of participants indicating having ever experienced a broken condom and 34% of those women indicating that they experienced condom breakage in the last month. Researchers conducted three multivariable logistic regression model to examine: 1) individual factors associated with condom breakage, 2) partner and situational variables associated with breakage, and 3) all variables together. Model 2, which examined partner and situational variables, found a significant association between condom breakage and prolonged sex, rough sex, relationship to partner, and poor fit of condoms. Model 3 that examined individual variables, partner variables, and situational variables together, found that condoms being too big or too small, whether the partner was a paying client, and the

severity of the roughness of the sex act were all significant predictors of condom breakage. The published study referenced a 2006 BBC study that examined penis size and available condom sizes in India, which found that the majority of Indian men have penis sizes smaller than the condom sizes on the market.

A 2010 study conducted amongst gay and bisexual men in New York City aimed to examine the intersect between penis size (length and girth), condom feel, ability and ease of finding condoms that fit, experiences with condom failure, and unprotected anal sex. (Grov et al., 2013) The study entailed a paper-based survey that surveyed a total of 463 men who identified as gay or bisexual. Survey results indicated that while 71.7% of respondents reported that average male condoms were just right to fit their penile length and 61.3% reported that the same condoms were just right to fit their penile circumference, only 38.4% of men surveyed indicated that it was easy to find condoms that fit their penises. Researchers generated a matrix of association to examine the intersect between penis size, condom feel, ease of finding condoms that fit, and experiences of condom breakage or slippage (condom failure). Study results highlighted that men who reported measuring their penis girth were more likely to report that standard male condoms were too tight and reported a higher rate of condom breakage or slippage. The study also highlighted a positive association between unprotected penetrative anal intercourse and participants reporting that the average condom was too tight on their penis. Of the 463 men surveyed, 21.6% (n=100) reported unprotected anal sex with a casual male partner. Respondents who reported recent unprotected sex in the previous three-month period reported larger measurements for both penile circumference and penile length.

Commercial Sex and Condom Use in South Africa

While there has been research conducted around experiences of condom failure and condom use, as well as research around barriers to condom use amongst sex workers, there is a dearth of research that examines whether condom size and lack of diversity in condom sizes is a barrier to increased condom use in the sex work industry. To date, there has been no research or published literature surrounding issues of condom fit and feel and condom failure as a barrier to condom use amongst the sex worker population in South Africa. Yet failure amongst sex workers to consistently use condoms continues to pose a challenge to public health efforts to curb new HIV and STI infections and prevent unwanted pregnancy.

In a 2010 study conducted in Hillbrow, Sandton, Rustenburg, and Cape Town, South Africa, male, female and transgender sex workers participated in a cross-sectional survey to examine their sexual behaviors and risk factors for unprotected sexual intercourse (Richter et al., 2013). The study found that male sex workers were four times as likely to engage in sexual intercourse without a condom with last client (n= 45, 20.0%) than their female counterparts (n=1,498, 5.5%). Transgender sex workers were over five times (n= 69, 27.5%) more likely to engage in unprotected sex with their last reported client than their female counterparts. Multivariate analysis conducted with the study data reported that transgender sex workers were 2.4 times more likely and male sex workers were 2.9 times more likely to engage in unprotected sex with last two clients than female sex workers.

Limited studies conducted to date in South Africa highlight the barriers to condom negotiation amongst sex workers and their partners based on their relationship type. A study conducted in

KwaZulu-Natal in 2010 examined condom use amongst high risk women to identify factors associated agency and the ability to negotiate condom use (van Loggerenberg et al., 2012). A prospective observational cohort of 245 women interviewed (78.8% identified as sex workers) found that women reported a higher efficacy of condom use choice at last sexual encounter with casual partners compared to steady partners. Women reported a higher self-perceived ability to negotiate condom use with casual partners, with 53.9% of women indicating they felt that they could always negotiate condom use with casual partners compared to 20.8% of women who reported that they felt they could negotiate condom use with a steady partner.

Gaps in the Literature

To date, few studies have compared the success of fitted versus standard condoms in terms of increasing condom acceptability and decreasing condom errors. Particularly within the context of South Africa, there is a research gap in evaluating men's desire for expanded condom size options, as well as the feasibility of utilizing fitted male condoms in the context of commercial sex work. Scientific knowledge regarding the relationship between penile size and condom use behaviors, and in particular how penile size influences condom use decisions by the wearer and his partner(s), is in its infancy.

Limited research on condom size as a barrier to condom use has been domestically focused amongst male populations in the United States, with much research focused on small populations of heterosexual men and women, men who have sex with men, and males accessing sexual health services. Few studies examined female perceptions of condom fit and discomfort from the perspective of the female sex partner. There has been limited academic research conducted on to

the issue of condom size as a barrier to increased condom usage between sex workers and their clients.

Overall, scientific literature regarding the health of sex workers has solely focused on female sex workers and their barriers to condom use. No studies were found that addressed the specific condom use patterns of and challenges to barrier methods amongst male and transgender sex workers. Sex worker focused research has been traditionally limited to examining the experiences and behaviors of female sex workers. Given the stigma towards and lack of legal protection for non-heterosexual individuals or persons who identify as a gender other than the gender of their birth in many developing countries, this continues to be an under-researched population that would otherwise benefit from academic and scientific research that would address the needs of these populations. Despite the need for specific services and interventions targeting sex workers as a high-risk group, there continues to be a dearth of current and relevant research surrounding the health of and risk reduction amongst sex workers in South Africa and elsewhere around the world.

Chapter Three: Manuscript

"*There was no condom to fit the guy's penis*": Sex Workers' Perceptions of Male Condom Size in Cape Town, South Africa

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Contribution of Student

I am one of the primary investigators of this study and the sole author of this paper. Data was collected by a team of four graduate students from Emory University, in collaboration with gatekeepers and reproductive health stakeholders at the Human Sciences Research Council (HSRC) and the Sex Worker Education and Advocacy Taskforce (SWEAT) in Cape Town, South Africa. I analyzed all data using MAXqda 10, with the guidance of my thesis advisor, Dr. Monique Hennink. Dr. Monique Hennink and Dr. Roger Rochat provided further assistance with editing and revising the document.

Abstract

Background: South Africa bears one of highest rates of HIV in the world, with 18.8% of South African adults between the ages of 15 and 49 reported as being HIV positive. Sex workers are considered an at-risk, vulnerable population who continue to bear a high burden of HIV in South Africa. Female, male and transgender sex workers engaged in the sex industry continue to face barriers to increased condom use in sexual encounters with clients.

Objectives: To understand condom use practices amongst female, male, and transgender sex workers and their clients, this study explored condom use amongst sex workers through the perspective of sex workers in Cape Town, South Africa. The study further examined sex workers' perceptions on the need for expanded condom size options to increase condom use in the sex work industry and whether expanding condom size options might increase condom use amongst sex workers and clients.

Methods: In-depth interviews were conducted amongst 20 female, male, and transgender sex workers affiliated with SWEAT as peer educators who identified as sex workers or former sex workers.

Results: Irrespective of gender, sex workers reported experiencing issues with limited condom sizes that fail to fit the wide variation of penis sizes on the part of clients. Sex workers reported that condom size serves as a barrier to consistent condom use with clients, and indicated that this puts them at increased risk of negative health outcomes including disease acquisition and unintended pregnancy. Condom failure is a common occurrence amongst sex workers. Sex workers expressed interest in the diversification of condom sizes and believe that increasing the variation in male condom sizes would encourage clients to reevaluate their decisions to use condoms.

Discussion: Condom size is a barrier to increased condom use amongst sex workers and clients. Experiences of condom failure expose sex workers and clients to adverse health risk, often resulting in inconsistent use or aversion to condoms on the part of clients. There is a need for continued research on how condom size diversification could alter the way people perceive condoms and the consistent utilization of condoms within the context of sex worker-client relationships.

Introduction

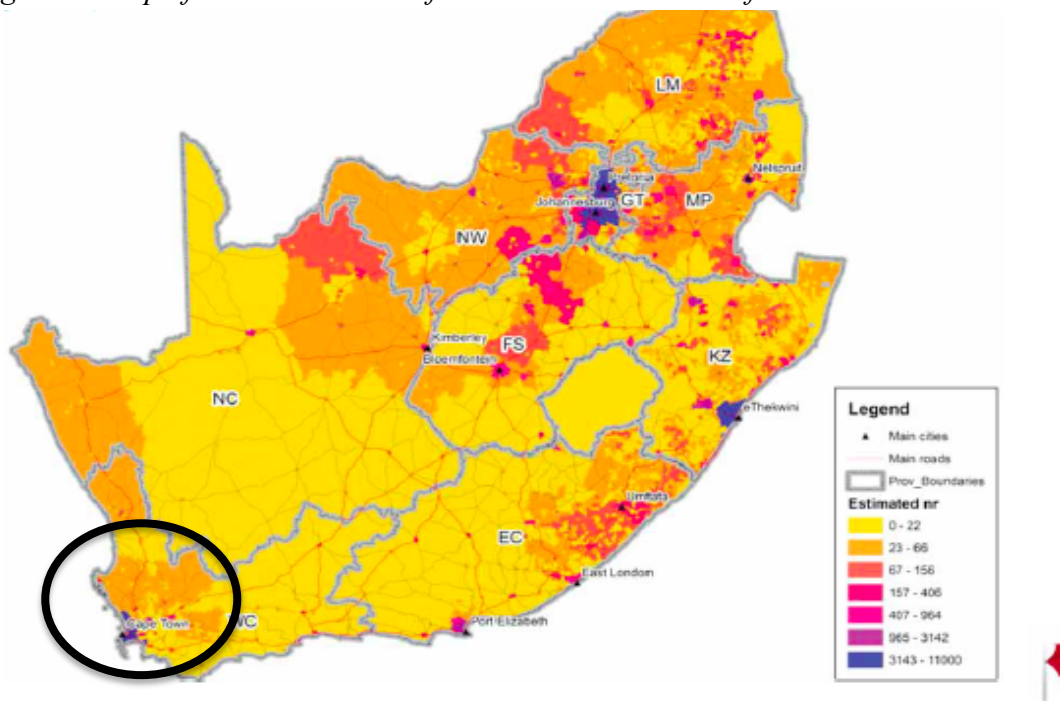
The South African government estimates that there are between 131,875 and 182,040 sex workers of all genders engaged in the South African sex trade, with approximately 16,000 operating in Western Cape Province and 5,000 operating in the Cape Town metropolitan area (SANAC, 2013). Given the high numbers of individuals engaged in sex work and the increasing HIV rates in South Africa, sex workers in Cape Town are a vulnerable population that is at-risk for continued negative health exposures. Health risks amongst sex workers are exacerbated by continued resistance to condom use amongst sex worker clients and inconsistent condom use. Previous research has highlighted multiple variables that act as barriers to condom use amongst sex worker populations and the clients that they serve (Ghimire et al., 2011; Jie et al.,, 2012; Richter et al., 2013; van Loggerenberg et al., 2012). The emergence of new research on condom size as a barrier to condom use and the variability of condom options in recent years highlights the need to explore alternative condom options to reinvigorate the condom market and increase condom use (Crosby et al., 2005, 2007, 2008; Reece et al., 2008; Bradley et al., 2012). To date, condom size as a barrier to condom use amongst sex workers has been an under-researched field. Thus, the purpose of this study is to understand condom use practices amongst female, male, and transgender sex workers, and their clients, and explore the context of condom use amongst sex workers through the perspective of sex workers in Cape Town, South Africa. The study further examined sex workers' perceptions on the need for expanded condom size options to increase condom use in the sex work industry and whether expanding condom size options might increase condom use amongst sex workers and clients.

Methods

Research Context

The study site was located within metropolitan Cape Town, South Africa, due to its large population of commercial sex workers within the city area. It is estimated that the sex worker population in Western Cape province accounts for 11% of the total estimated sex worker population in South Africa (intermediate total 153,000) (SANAC, 2013). Based on 2011 population estimates, approximately 15,699 females, 785 males, and 628 transgender persons are engaged in the sex industry in Western Cape province. Given the high numbers of individuals engaged in the sex industry, the research team believed that this was an ideal population to work with to examine issues of condom size and whether the introduction of custom-fitted male condoms would encourage increased condom usage amongst the sex worker community and their patrons.

Figure 1: Map of the Distribution of Sex Workers in South Africa



Source: South Africa National AIDS Council. Estimating the Size of the Sex Worker Population in South Africa, 2013.

Study Design

This qualitative study consisted of 20 in-depth interviews with female, male, and transgender sex workers affiliated with the Sex Worker Education and Advocacy Taskforce in Cape Town, South Africa. In-depth interviews were used because of their ability to generate a depth of information regarding condom use history, barriers to condom use amongst clients and sex workers, experiences of condom failure, and variations in penile size amongst sex worker partners. Interviews were also selected above focus group discussions to provide sex workers with the opportunity to fully engage in the interviews and share highly sensitive and personal experiences surrounding their sexual behavior, preferences, and practices, as well as sensitive information regarding personal health information.

Study Population

The target population was males, females, and transgendered persons who identify as sex workers, aged 18 years or older. Participants had to be residents of Cape Town and had to identify as sex workers, regardless of whether they were engaged in sex work at the time of the interview. Sex workers under the age of 18 were not included due to their minor status and additional ethical considerations that would result in changes to the study design, protocol, and IRB approval process. Study participants were all affiliated with the Sex Worker Education and Advocacy Taskforce (SWEAT) and were either currently or previously engaged in sex worker peer education activities with SWEAT. No minimum duration of engagement in sex work was required for participation in this study, although participants reported varying years of engagement in sex work ranging from two years to over 20 years. All participants were asked to indicate what gender they identified with at the beginning of each interview. No information

was collected about ethnicity of participant, or educational or income status, although some participants disclosed such information during the course of the interviews.

This study population is appropriate for this study because due to the nature of their work, they have ample experience using condoms in their work and engaging with clients with varying perceptions of condoms. Sex workers are often marginalized and operate their business in secret, beyond the watchful eyes of society. They are a hard to reach population that is at a disproportionately high risk of disease acquisition and transmission, and they are often denied health and social services that would protect them and their clients.

Participant Recruitment

Potential participants were identified in collaboration with the study point person at SWEAT, who identified a Peer Educator Coordinator to promote the study amongst sex workers in Cape Town and to identify possible participants. Inclusion criteria was limited to individuals who identified as female, male or transgender, were over 18 years of age, and identified as a sex worker. Inclusion criteria were intentionally broad to allow researchers to recruit individuals with a wide history of sex work and varied experiences. Given the delicate nature of the work of the participants and the illegal status of sex work in South Africa, it was not possible for us to conduct street recruitment of sex workers. Therefore, researchers relied on existing support structures and the guidance of the leading sex worker advocacy organization in South Africa to gain access to the sex workers network. Participant recruitment was conducted amongst SWEAT's existing network of sex worker peer educators.

SWEAT appointed a liaison within their organization that coordinated confidential recruitment amongst sex workers who indicated interest in participating in this study. The Peer Educator Coordinator announced the dates and times research team members were scheduled to conduct interviews at SWEAT. Sex workers were informed that a maximum of 20 interviews would be conducted and that sex workers would be interviewed on a first come, first serve basis until all 20 interviews were completed.

Data Collection

Three graduate students from Emory University's Rollins School of Public Health conducted 20 interviews with sex workers trained as peer educators through the Sex Worker Education and Advocacy Task Force (SWEAT). A semi-structured in-depth interview guide was utilized for this study (see Appendix A). Following the initial creation and review of the in-depth interview guide by project mentors, multiple pilot interviews were performed amongst the research team. Upon arrival in South Africa, an in-country collaborator at the Human Sciences Research Council checked and revised the interview guide to ensure that language and questions were culturally appropriate.

Interviews were conducted at the office of the Sex Worker Education and Advocacy Taskforce due to its central location and accessibility by the sex workers. Interviews were scheduled on days when sex workers held peer education meetings to maximize the potential participant pool available on those days.

During initial interactions, potential participants were presented with the "Information Sheet (See Appendix B)," which details the study aims, processes, the participant's rights, and contact information for concerns/questions. If participants expressed interest in participating and screening eligibility was met, study personnel provided potential participants with the "Informed Consent Sheet." Potential participants were then given 10 minutes to read and review the "Informed Consent," which contained the same details as the "Information Sheet", plus a few additional details describing the consent process. Study personnel then asked individual participants if they had any questions, specifically addressing each topic heading. Potential participants then provided consent by signing the "Informed Consent Sheet" (See Appendix C), at which point the study personnel countersigned as witness.

At the beginning of each interview, the interviewer described the purpose of the research and verbal informed consent was obtained from each participant. Interviews lasted an average of 45 minutes and all interviews were digitally recorded. The interviews were conducted in English and were interspersed with local South African vocabulary to explain local concepts. Interviews aimed to explore condom use amongst sex workers with clients and non-paying partners, the power dynamics in male condom negotiations, barriers to male condom use with sex worker clients, availability and access of male condoms, and condom preferences. Participants were also asked questions to explore sex workers' interest in custom-fitted male condoms, and how sex workers would feasibly introduce this type of condom into transactions with clients. In keeping with local precedents and customs, compensation of 50 ZAR was provided to all study participants who completed interviews to thank them for their time.

Data Analysis

Data comprised of digital recordings of all interviews were transcribed verbatim using Express Scribe software. MAXqda was utilized for the purpose of data analysis, which consisted of code development, data analysis, and identification of common themes across interviews. Utilizing an inductive and deductive coding process, thematic analysis was used to identify crosscutting themes entrenched within the interview transcripts. Inductive codes were developed from the direct responses of the study participants and the discussion of relevant issues pertaining to the research question. Reviews and analysis of interview transcripts also included the development of deductive codes which were informed by existing academic and scientific literature regarding sex worker condom use practices, barriers to condom use amongst sex workers, and research on condom fit and condom failure as it pertains to condom usage.

In the process of identifying inductive and deductive codes emerging from the data and existing literature, a codebook was developed to serve as a data-management tool and index of all codes pertinent to the data. The codes were then examined in relation to one another to identify relationships and common patterns between codes to develop thick descriptions. This process allowed for the identification of emerging themes that resonated across interviews, while various codes identified differing perspectives regarding crosscutting themes. Once the major themes were identified, the data was re-contextualized and findings were categorized to distinguish between sex worker perceptions of condoms, client perceptions of condoms as perceived by sex workers, problems with condom size and experiences of condom failure, and demonstrated need for an expanded number of condom sizes. In re-conceptualizing the data, a subset of questions emerged from the data. Questions that developed out of data analysis include:

- What are the perceptions of male condoms amongst female, male, and transgender sex workers, and their clients?
- What are the experiences of condom failure (condom slippage and breakage) amongst sex workers, and how do these experiences affect condom use with clients?
- How do sex workers perceive the possible introduction of fitted male condoms into the sex work industry affecting condom use between sex workers and clients?

Ethical Considerations

Ethical approval was obtained from Emory University's Institutional Review Board and the Human Sciences Research Council's Research Ethics Committee. Informed Consent was obtained from each participant prior to each interview and participants were assured that their participation was entirely of their own volition and that their involvement in the study would remain anonymous. Initially, the research team intended to obtain verbal consent from sex workers to protect their identity and participation in this study. The research team hoped to create a safe environment where participants felt comfortable disclosing highly sensitive details about their intimate relationships, sexual history and/or work environment. However, after discussions with the HSRC Research Ethics Committee and SWEAT, we opted for a written consent process. To ensure written forms were kept confidential, signed consent forms were secured in a lock box for transport back to the United States and only members of the research team have access to the paper copies of consent forms.

Results

To highlight the experiences of sex workers using condoms with clients and the perceived need for expanded condom size options, findings are presented in a sequence following the condom use decision-making process through to the completion of the business transaction. In presenting findings in this manner, perceptions of condoms on the part of sex workers and clients (as perceived by sex workers) elucidate barriers to condom usage and explore how experiences of condom failure inhibit increased condom use in the sex trade. Finally, the results provide insight into how sex workers conduct business with their clients in the absence of condoms that fit the penis size of their clients.

Sex Workers Perceptions of Male Condoms

Overall, sex workers reported positive attitudes towards male condoms and reported consistent condom use with clients. Many sex workers view condoms as an essential tool of their trade and indicated that they "condomize" to protect themselves from acquiring HIV or other sexually transmitted infections. Some sex workers indicated that while they do not personally like using condoms and do not use condoms with non-paying partners, they understood the safety and health benefits of condom use with paying clients. Many sex workers indicated that lack of knowledge of proper condom use and the benefits of using condoms with casual partners resulted in lax condom use when they first entered sex work. As a result, many sex workers indicated that knowledge of their HIV status after years of sex work prompted them to insist on using condoms with every client.

Sex workers also view certain condoms characteristics as more attractive to clients. For instance, sex workers of all genders indicated that they have a preference for using colored and flavored

condoms over standard latex condoms because they are perceived as being better quality and well received by clients. Sex workers indicated preferences for certain brands of male condoms over other brands, and indicated that the type of condom that they carried and presented to their clients had the potential to affect their business. Many sex workers expressed dissatisfaction with the government branded 'Choice' condom, a standard size lubricated latex condom, and indicated that they prefer colored and flavored condoms that their clients find more appealing.

Although study participants overwhelmingly indicated positive attitudes towards condoms, they expressed frustration with the lack of diversity in condom size, and indicated that condom failure is a regular occurrence in their work. They also reported that they faced challenges in securing their preferred brand of condom during their working hours, indicating that condom access is a challenge for sex workers.

Clients Perceptions of Male Condoms

This study focused on sex workers experiences of condom use and their perceptions of clients' attitudes and preferences towards condoms. While no clients were interviewed for this study, sex workers were able to share clients' perceptions of condoms and condom usage behaviors that hinder condom use in sex worker-client interactions. Sex workers of all genders indicated that many clients still have negative perceptions of condoms and continue to resist condom use when engaging in sexual transactions with sex workers. In spite of knowledge of HIV and the protective benefits of condoms, clients continue to attempt to engage in unprotected sex with interviewees. Among reasons for resistance to using condoms, multiple study participants reported that clients had negative attitudes towards certain brands of condoms, questioned the

quality of condoms, reported discomfort and ill-fit using current condom options, and tried to use their negative HIV status as a means to negotiate not using condoms with sex workers.

Multiple study participants indicated that there is a perception amongst clients that the free government condoms are not safe or are not as good of quality as other free brands or brands available for purchase in the shops or chemists. Some sex workers indicated that clients perceived sex workers who use free government condoms to be cheap, indicating that clients associate condom brand with economic status amongst the sex worker population.

> "We find it very difficult when we don't have the flavored condoms because the service users, they now want to use the flavored condoms. They don't want to use the Choice condoms, the ones that government distribute. So they always complaining that, ah, they are smelling wrongly, and that they've, they make them scratch and all those kind of stuff." ~ Male Sex Worker

Sex workers indicated that clients viewed condoms as unnecessary when the client knew they were HIV negative. Some sex workers reported that clients elected not to use condoms if they know they are HIV negative, even in the absence of knowledge about the serostatus of the sex worker. Client perception of risk of disease acquisition appears to affect the decision to use condoms on the part of some clients. One male sex worker shared an experience with a client who is an employee of the local health department:

> "Most of the clients, we, we, we, um, let me talk about myself. I deal with, some of the clients, they are working in the health department, or so where they get AIDS education and what so ever, they know exactly the use of and importance of using a condom. But

> still I had a client, the client was a doctor. And he, he, he insisted that let's not (use condom). But I said, "Being a doctor but you don't want to use a condom. Why?" Because he said, "No, I know that myself, that I'm clean." I said, "Oh, you're clean," and then I was about to believe him. And then something came to my mind, behind his profession is a human being, no let me insist on a condom." ~ Male Sex Worker

Sex workers also indicated that clients perceived male condoms as the cause of erectile dysfunction or performance issues. Multiple sex workers attributed erectile performance with ill-fitting condoms, suggesting that penile constriction as a result of condoms fitting tightly might cause loss of erection amongst clients who have larger penises.

> "It's too tight, so instead of just having the erection and and and being hard, and you know, worked up, now the condom is tight on the penis." ~ Female Sex Worker

> "Some clients say they cannot have an erection (when using a condom), or they can't cum if they use a condom." ~ Female Sex Worker

Other sex workers recounted that clients expressed an aversion to using male condoms due to diminished pleasure and enjoyment when utilizing condoms during sex. Study participants indicated that clients complained about not being able to feel as much sensation when wearing condoms and that it felt like wearing plastic wrapped around the penis instead of feeling as if they were being intimate with a partner.

> "There are beliefs, too. They say they can't feel the woman, you can't feel the vagina if there is a plastic. They believe that it is a plastic condom. And also they think, eh, is that

> they don't see a difference between when you're using a condom or not using a condom. So there is no need of a condom." ~ Female Sex Worker

In addition to complaints about loss of sensation and pleasure when using condoms, sex workers of all genders overwhelmingly reported that clients have negative attitudes towards condom use due to issues with the size and fit of condoms. Ultimately, clients and sex workers are faced with using condoms that do not fit or result in discomfort, therefore they engage in unprotected sex, or terminate the business transaction. Sex workers indicated that in the absence of condoms that fit their penis size, clients would resort to wearing condoms that didn't fit due to lack of alternative options.

> "It's just the size that is the issue because they say it's small. Then you will put the condom on yourself, you feel that it's very tight at the end. And the guys will say, "Oh, it's pinching" and all that. But you use it anyway because what else can you do?" ~ Female Sex Worker

Condom Failure and Identified Need for Fitted-Male Condoms

Male, female and transgender sex workers reported experiencing condom failure, which includes either condom breakage or slippage, with clients and non-paying partners. Sex workers indicated that experiences of condom failure often resulted in termination of the business transaction, exposure to negative health risks, or negative outcomes for sex workers including physical or sexual assault.

Experiences of Breakage

All study participants reported experiencing condom breakage at least once during their engagement in sex work, while many sex workers reported that condom breakage was a recurring issue in their dealings with clients. Sex workers indicated that condom breakage often resulted in interruption of the sex act, application of a second condom and continuation of the sex act, or in some instances, the termination of the business transaction.

Some sex workers reported feeling the condom break during the act of penetrative sex, while other sex workers reported experiences of engaging in either vaginal or anal intercourse with clients and not realizing that condom breakage had occurred until the sex act had come to completion and the client or sex worker had withdrawn the penis.

> "Sometimes you find it that you have done the business with the client and then you did put the condoms. But then you finish, ah, your thing, the condoms is already broke." ~ Male Sex Worker

Some participants reported that they experienced adverse health events as a result of condom breakage experienced with clients. One female sex worker recounted a sexual encounter with a male client in which the condom broke during intercourse and breakage wasn't discovered until the client withdrew the penis post-intercourse. The sex worker recalled how she experienced vaginal itching and burning following her encounter with this client, and how she sought medical treatment at a local health facility. During her consultation with the medical officer, the sex worker was accused of not using a condom and was blamed for her situation. Another female sex worker shared how she became pregnant after experiencing condom breakage with a client.

Faced with an unplanned and unwanted pregnancy, the female sex worker had the pregnancy terminated.

Sex workers attributed condom breakage with client penis size or client attempts to self-sabotage the male condom during the application process. Some participants reported that condom breakage during the application process hindered the continuation of the sexual transaction, while others reported that in cases of condom breakage, they would use another condom to complete the sex act. Experiences of condom breakage as a result of penis size often resulted in termination of sexual transaction between sex workers and clients. Some sex workers indicated that in instances of breakage, they would only resume sex with a client if the client paid them for a second time.

> "Normally if the condom is a little bit too small, if it's a guy with an over large penis. And he wears a condom and after the second pump, it breaks. Haha, it definitely breaks. So what I normally do, if it breaks, business is over. Business is over whether you have enjoyed your satisfaction, I don't care. It's over." ~ Transgender Female Sex Worker

Experiences of Slippage

Many female sex workers reported occurrence of condom slippage, although male and transgender sex workers reported not experiencing condom slippage during intercourse with clients. In a few interviews, female sex workers attributed condom slippage to small penis size on the part of the clients. Penis size was reported to be an issue by female sex workers who reported having older clients who they identified as being overweight or having "sugar diabetes." These women associated diabetes or clients being overweight to their small penis size.

While male and transgender sex workers did not report occurrences of condom slippage with clients, they did recount experiences shared by female sex workers. One male sex worker reported that a fellow female sex worker had experienced male condoms falling off during sex and getting stuck in the vaginal canal.

> "Sometimes they do tell me that, ah, they didn't know where is the condom, because they said that if they do their business, sometimes they do it and when the client try to look the condoms, they don't know, the condom is stuck inside." ~ Male Sex Worker

Penis Size and Condom Fit

Male, female, and transgender sex workers indicated that condom breakage overwhelmingly occurred during sex with clients with larger penile size. Condom slippage was perceived to be the result of small client penile size. Sex workers also indicated that resistance to wearing condoms often occurred with clients who expressed issues with the comfort and fit of male condoms. Multiple sex workers indicated that clients with bigger penises often refused to wear condoms or resisted wearing male condoms due to discomfort associated with fit. Overwhelmingly, sex workers attributed condom failure to issues with the penis size of their clients.

> "Some of the clients have got small, this frightfully small penis and then condom just, and then the condom yeah, it says one size fits all. But you see the condom is, when you do business with the client, and then, the condom just slip off all of the time. And in most of the cases, its much, the condom is too small and the client have too much big penis." ~ Male Sex Worker

Study participants repeatedly reported challenges finding condoms that properly and comfortably fit their clients due to a wide range of penis sizes amongst clients. Multiple sex workers likened the challenge of finding condoms that fit their or their clients' penile dimensions to finding clothing or footwear that fit their sizes.

> "Because people get different penises and can't find for your size. Maybe you're offering this size in a certain shop, you go there and you don't find you're size, and trying to, looking for another shop to find your right size. It's like you are looking for your right size of shoe and you can't find it in the shop." ~ Male Sex Worker

Sex workers reported various encounters with clients where the condoms available at the time of the transaction was either too big or too small to meet the penis size of the client. One male sex worker recounted a story told to him by a female sex worker about an encounter with a men's football team from another African country:

> "There was a lady sitting there that talked about this African soccer team that came from I don't know which country, African country. But they came and pick her up. She was in Green Point, they pick her up. She talked about the guy, doing sex with the guy, and she explained it. I don't even think there is a size condom, the way she explained about it, she said the guy's whole penis couldn't even go into her. That's all she talked about. There was no condom to fit the guy's penis." ~ Male Sex Worker

Another sex worker, a female who services male clients, shared an experience with a client whose penis was too small to wear the standard size male condom. During this particular

experience, the client insisted on carrying out the sexual transaction even though the condom was ill fitting. She indicated that the penis was so small that the condom only unrolled once and that was enough to cover his length. In this instance, the sex worker took a piece of elastic and tied it around the base of the penis shaft to hold the condom in place. However, the elastic had a tourniquet effect, cutting off penile circulation and resulting in pain to the client. Sex workers also indicated that government supplied condoms were available in one size fits all and were either too small for clients with large penises or too big for clients with small penises. Multiple participants indicated experiencing breakage while using government branded Choice condoms, resulting in an aversion amongst many sex workers to this particular brand.

Ultimately, sex workers reported experiencing condom breakage when engaging in sex with clients with larger penile dimensions. However, sex workers acknowledged that breakage would continue to be a part of sex work due to lack of condom options that would meet the physical parameters of the varying penile dimensions of their clients.

> "It was a foreigner guy and he wears Choice and then it was small. But he didn't have no choice because it was Choice. Choice is the biggest size, so we use it and then it break."
> ~ Female Sex Worker

Attitudes towards Fitted Male Condoms

Sex workers identified a need for condoms in different sizes to meet the needs of themselves and their clients. Additionally, sex workers indicated that they believed that the introduction of fitted-male condoms might encourage clients to reconsider not using a condom. Participants

indicated that making condoms available in a wider variety of sizes would negate client complaints about discomfort and loss of pleasure as a result of ill-fitting condoms.

> "If someone can get their size, I think they can be more open of using the condoms because you find that they are the ones that don't want to use. Because they are ashamed of the condom that is bigger or it's smaller." ~ Male Sex Worker

Sex workers indicated that knowledge of condoms is high amongst clients but that resistance to condom use persists due to how clients feel about wearing condoms and their complaints about how condoms hinder enjoyment of sex. They expressed enthusiasm towards the possibility of introducing male condoms in different sizes to clients as a way to get clients to revisit and rethink their pre-conceived notions towards male condoms. Participants also expressed that experiences of condom failure resulted in feelings of anxiety due to potential health risks associated with condom breakage or slippage, and any resulting exposure to partner body fluids. Additionally multiple sex workers disclosed their own HIV status and reported in interviews that they worried about exposing their clients to HIV in the event condom breakage or slippage occurred. Female sex workers in particular recounted experiences of condom breakage or slippage where the condom got stuck inside the vaginal canal, resulting in prolonged exposure to clients' semen. While sex workers of all genders recognized the health risks associated with condom breakage for themselves and their partners, female sex workers also had the added fear of unwanted pregnancy and the need to seek abortions. Overall, study participants believe that the introduction of fitted male condoms into the South African market could provide a powerful tool for sex workers to protect themselves and their partners from health risks associated with unprotected sex and condom failure.

Protective Strategies without Fitted Condoms

Until a wider variety of condom sizes are available to the sex worker population and the South African population at large, sex workers indicated that in the absence of condoms in various sizes, they resort to alternative prophylactic measures (See Figure 2). In many cases, sex workers reported modifying existing male condoms to fit their clients or using female condoms in instances where male condoms were insufficient to suit the penile dimensions of their clients.

Figure 2: Alternatives to Vaginal or Anal Sex in the Absence of Condoms that Fit

	Barrier-Free Sex	Alternative Barrier Methods	Non-Vaginal or Anal Sexual Acts without barriers
Gender			
Male	Dependent on the client and commensurate with payment received Unprotected sex with non-paying partners	Utilization of female condoms for anal sex with male clients	Oral sex in the absence of condom use
Female	Dependent on the client and commensurate with payment received Unprotected sex with non-paying partners	Utilization of female condoms for vaginal and/or anal sex with male clients Alteration of male condoms to fit the physical dimensions of client penises (i.e. cutting male condoms and securing them with elastic) Utilization of female condoms for oral sex	Oral sex in the absence of condom use Non-penetrative sex acts • Thigh Sex • Fondling and teasing • Hand jobs
Transgender	Dependent on the client and commensurate with payment receive	Utilization of female condoms for anal sex with male clients	Oral sex in the absence of condom use

Sex workers also reported engaging in non-penetrative sex acts to satisfy clients who either demanded sex without a condom or who had issues completing penetrative sex without the

condom breaking or falling off during intercourse. Finally, sex workers were faced with deciding whether to have sex using an ill-fitting condom, forego condom use and have unprotected sex, or end the business transaction.

Alterations of Existing Condoms

Female sex workers reported altering existing male condoms to fit clients with smaller penis sizes. One female sex worker recounted an experience with a client whose penis was so small that the male condoms available continued to fall off during sex. In an effort to prevent slippage and continue with the sex act, the sex worker cut the length of the condom to shorten it and then used elastic to secure the condom around the penis shaft. However, this resulted in constriction of the penis and resulted in loss of sensation for the client. Another female sex worker recounted an interaction with a client with a penis that was so small, she only unrolled it twice down the shaft and the full penis was covered. To continue the sex transaction, the female sex worker also used elastic to secure the condom in place.

Female Condom Use Amongst Male and Transgender Sex Workers

In other instances, sex workers indicated that they used female condoms in instances where the client refused to use male condoms or the male condoms available didn't fit the clients' penile dimensions. Male and transgender sex workers reported female condom use for anal sex on occasions where clients refused to use male condoms. Use of the female condom puts control in the hands of the receptive partner, usually the sex worker in a sex worker-client encounter. Both male and transgender sex workers indicated that in instances where male clients refused to use standard male condoms, this was the safest alternative. Other sex workers indicated that they

would pre-insert the female condom into the anus prior to the start of a night soliciting clients for paid sex and that some clients would have sex with them without even realizing that the sex worker had inserted a female condom into the anus.

> "In some cases, I use the female condom without the ring. So I put the female condom on me so the client doesn't know whether there is a condom or not. Because I know a lot of clients who doesn't like to use a condom, for my safety before I approach a client, I already have condom in me."~ Male Sex Worker

> "There is also another option to use the female condom when they don't want to put on a condom. Just use, because in fact, most of gay guys they use the female condoms, just take out the ring inside, then you insert it into yourself. Then you don't have to stress about putting on the condom." ~ Male Sex Worker

Other sex workers indicated that in the absence of condoms in larger sizes, the sex worker or the male client would resort to wearing the female condom on the penis. In these instances, either the sex worker or client will remove the inner ring of the female condom, apply the female condom to their penis, and then slide the ring over the sheathed penis to hold the female condom in place. Sex workers electing to use female condoms instead of male condoms or no condoms indicated that this was preferable for clients. The burden of wearing the condom falls on the sex worker and clients who either don't want to wear male condoms due to discomfort or dislike still get serviced by sex workers.

> "I think they like it that way because there is nothing on their dick, they don't feel like something is disturbing." ~Male Sex Worker

While some sex workers voluntarily choose to use female condoms instead of the alternative of having unprotected sex, some sex workers indicated using female condoms out of sheer necessity. A transgender female sex worker reported using female condoms with clients whose penises were too large and who experienced condom breakage or discomfort with the fit and feel of standard size male condoms.

> "Because it was too tight for him, so he also made the excuse of not liking to use condoms because some condoms are very tight. But for him, I didn't sleep without condom because there are these female condoms. You know most, they are very big so I just suggested to him that how about using these female condoms because they are big and you know, they don't make, you know, the penis very tight like the male condoms. We ended up using this, uhh, female condom and you know mostly, there is that ring inside, you know. We took that ring out, then I just put the condom on his penis and then after I just put the ring on until it reaches, you know, his scrotum." ~ Transgender Female Sex Worker

Non-Penetrative Sex in the Absence of Condoms

Some sex workers reported engaging in non-vaginal or non-anal sex acts in instances where clients refused to wear condoms or in the absence of condoms that fit the penile dimensions of their clients. One transgender sex worker reported an encounter with a client who didn't want to use male condoms and accused her of being HIV positive because she demanded the client wear a condom. In this case, the sex worker reported that the client continued to refuse to wear a condom and as a result, the sex worker refused to engage in penetrative intercourse with the

client. Instead, the sex worker allowed the client to engage in "thigh sex," in which the client puts his penis between the sex worker's thighs and imitates the motions of penetrative sex until reaching ejaculation.

Other sex workers will engage in oral sex without a condom, as some sex workers perceive the risk of disease transmission as being lower with oral sex than with penetrative vaginal or anal sex. Finally, some sex workers reported that they sometimes engaged in fondling, rubbing, or other forms of penile stimulation to please their clients and ensure that they got their money's worth.

Unprotected Sex in the Absence of Condoms

Multiple study participants indicated being faced with the reoccurring challenge of having to decide whether or not to engage in unprotected sex with clients who refused to use condoms because of an issue with fit or feel, including the condom being too tight, too short, too long or too loose. Male, female, and transgender sex workers all indicated that they had to choose between engaging in sex without a condom in return for higher financial compensation or forgoing the opportunity to make money by refusing sex with a potential client. Some sex workers recounted periods of slow business where they had no clients for a whole night and then were faced with deciding whether to engage in unprotected sex with the only potential client who offered to pay for sex.

Discussion

The findings of this study indicate that sex workers find that penis size and the lack of a wide range of condom sizes acts as a barrier to consistent condom use with clients. In addition to reporting barriers to condom use with clients, study participants reported that experiences of condom breakage or slippage are commonplace in their work, and are often attributed to ill-fitting condoms that are not one size fits all. Study findings also indicate that sex workers believe expanding the number of condom size options would result in increased condom usage in their sexual encounters with clients. At present, consistent condom use is negatively affected by the limited sizes of male condoms that do not accommodate the varying penis sizes of potential or current condom uses. Condom size continues to be a barrier for consistent condom use, thereby continuing to pose a threat to the health of sex workers and a hindrance to progress in combatting HIV and other sexually transmitted infections. Experiences of condom breakage and condom slippage amongst sex workers and their clients are often attributed to overly large or small penis size as identified by the sex workers, indicating that variability of penis size and limited condom size options affect condom usage in sex worker-client transactions.

Sex workers shared their perceptions of client attitudes towards male condoms and recounted how negative client perceptions of condoms affect condom use. Study participants reported that their clients have negative attitudes towards condoms due to perceived loss of pleasure and sensation during sex when using condoms, issues with the fit and feel of condoms, and complaints about condom failure. It is important to highlight that previous studies focusing on the fit and feel of male condoms reported that men found latex condoms to be either too small or too large. In a 2009 study conducted in the United States, 1,661 men were surveyed about

condom usage and condom size (Reece et. al., 2009). The published study results found that 10% of males reported that condoms were too loose, 32% of males reported that condoms were too tight, 17% of males reported that condoms were too long, and 12% of males reported that condoms were too short (Reece et.al., 2009). Study findings are consistent with these findings, with sex workers recounting issues with condom slippage due to small penis size on the part of clients and condom breakage with clients whose penises are too large to wear male condom sizes currently available in South Africa.

While sex workers reported that issues of condom failure attributed to ill-fitting condoms was a nuisance and interrupted sex acts with clients, they also reported that condom failure has the potential to cause adverse health outcomes for the condom wearer and his partner(s). Study participants recounted that condom failure is a regular occurrence in their line of work that poses an unavoidable risk to their health and safety. Multiple sex workers divulged their positive HIV serostatus and experiences with sexually transmitted infections as a result of inconsistent condom use or condom failure during their sex work. Female sex workers also recounted condom failure and inconsistent condom use with clients as the cause of unwanted pregnancies and resulting termination of pregnancies. Condom use and condom negotiation also posed a threat to the safety of sex workers, with sex workers indicating that insistence on condom usage sometimes resulted in physical violence or sexual assault on the part of clients. Given adverse health events experienced by sex workers due to non-condom use or experiences of condom failure, expanded condom size options could potentially result in an increase in condom use and a decrease in health risks that sex workers are exposed to in their profession.

The availability of limited condom sizes serves as a barrier to increased condom use amongst sex workers and their clients, and often results in sexual encounters that preclude vaginal or anal sex. In the absence of condoms that fit and minimize discomfort to the wearer, sex workers indicated that on many occasions, they had to resort to alternative protective measures. These include using a female condom for anal sex, non-penetrative sex acts that stimulated and satisfied clients, and in some case, unprotected sex due to increased financial compensation from client and dire financial need on the part of the sex worker.

Sex workers in this study believe diversification of condom size could result in increased condom use amongst clients and prompt clients with aversions to condoms to reconsider using condoms. Sex workers indicated that they have a great interest in using custom fitted male condoms with their clients and indicated that they believe penile measurement could be integrated as part of foreplay with their clients. This highlights the possibility that expanding condom size options could prompt individuals who had a negative experience of condom use due to their fit, feel and quality to reconsider condom use.

The need for greater variety in condom sizes has been found in other studies conducted in the United States. Results of a clinical trial published in 2008 suggest that increasing the range of condom sizes increased users' acceptance and use of condoms (Reece et al., 2008). Furthermore, the sales of custom-fitted male condoms increased significantly when introduced in Europe. When 'TheyFit' custom-fitted male condoms were introduced in 2011, 87.6% of initial purchases were outside the typical size range approved by the American Society for Testing and Materials (ASTM), indicating that there is a great demand for male condoms in non-standard

sizes (Cecil et al., 2013). Expanding the variety of condom sizes would meet the needs of sex workers who want their clients to wear condoms and would meet the needs of condom users or potential condom users who want a product that is protective but does not impede maximum sexual pleasure.

Another aspect of condom use not directly explored in this study but that appeared in numerous interviews is the issue of condom fatigue amongst the general population. After decades of government and non-governmental organization messaging about condom use and free condom distribution, South Africa is experiencing a period of decreased condom use even though condom education is widespread and free government condoms are easily accessible. The South African government has recently declared that the country is experiencing "condom fatigue", reporting higher HIV rates after years of progress in combatting the spread of the virus (BBC, 2014). Condom fatigue is a term that has been used in recent years to refer to trends in declining condom use and is often attributed to negative perceptions of condoms, apathy towards condom use, and oversaturation of prevention messages that focus on condom use. In an effort to encourage condom use amongst non-users or defaulters, the government announced that they will be distributing free condoms in colors and flavors to meet the demands of the populous that have a growing aversion to the government-branded Choice condoms. In study interviews, sex workers indicated a preference for male condoms available in colors and flavors, and reported that clients who are willing to use male condoms also have a preference for condoms with these features.

The availability of fitted condoms would not only address the issue of non-use amongst clients and the issue of condom fit, but would also enable the agency of sex workers to negotiate condom use. Sex workers reported continued resistance from clients to condom use and expressed that clients gave them various reasons as to why they don't like condoms. Expanding the range of condom sizes at the disposal of sex workers would invalidate client arguments about the ill-fit of condoms and could give sex workers more power to negotiate the usage of condoms with clients.

Although previous studies have been conducted to explore condom fit and feel, condom failure, and barriers to condom usage, this study examines a previously under-explored area of condom usage amongst an at-risk population. Despite the continued burdens created by HIV/AIDS and unintended pregnancy throughout the world, obstacles to condom use threaten to prolong these public health issues. Amongst a population that is at increased risk of negative health events due to non-condom use, this study highlights a demand for an expansion of available condom sizes. The introduction of fitted male condoms into the South African market has the potential to transform condom usage practices amongst sex workers and the wider population, and could have a profound effect on the prevalence of HIV/AIDS, sexually transmitted infections, and unintended pregnancies.

Limitations

This study examined perceptions of condom use and condom failure as experienced by male, female and transgender sex workers. It must be noted that there are other social factors that may account for condom breakage that were not assessed in this study. Among those factors that

were not examined, it is important to note that power dynamics within the sex-worker client relationship, roughness of sex, use of penile enhancers and performance supplements, alcohol and drug usage, and proper condom application and usage were not examined. While penis size and limited condom size were associated with condom failure amongst sex workers, these factors may account for some experiences of condom breakage or slippage. It is also important to note that condom failure was attributed to perceived causes of condom failure as retrospectively reported by sex workers.

In interviewing the sex workers, we examined one side of the sex worker-client relationship, thereby exploring client behaviors and opinions of condoms and condom usage as perceived by the sex worker and not by the clients themselves. It would be beneficial to examine client perceptions and attitudes towards condoms directly, and explore their experiences of condom failure and condom size directly to determine if clients themselves see a need for expanded condom size options.

Another limitation of this study is that interviews with sex workers were conducted in English amongst non-English speakers from a variety of ethnic and linguistic backgrounds. Given the varying backgrounds of the sex workers, it would have been challenging to conduct these interviews in another language given the different national and tribal affiliations of the sex workers participating in the study. While administering a pre-interview linguistic test to assess English speaking and comprehension, it would have limited the participation to those sex workers with the highest level of English skills and would have excluded participants with relevant experiences to share.

Conclusion

Research on how condom size impacts condom usage amongst sex workers in South Africa and elsewhere in the world is limited. This qualitative study shows that sex workers perceive condom size to be a barrier to consistent condom use in business transactions with clients. While the study identified multiple challenges to condom use in the sex industry in Cape Town, negative perceptions of condom size on the part of clients as reported by sex workers, issues with condom fit and feel, and experiences of condom failure negatively impact condom use. Inconsistent condom use and experiences of condom breakage or slippage place sex workers and their clients at a higher risk for negative health events including HIV and STI acquisition and unintended pregnancy. The study highlights that in the absence of condom size options to fit the wide range of client penis sizes, sex workers resort to engaging in non-penetrative sex acts or unprotected vaginal or anal sex. Sex workers also resort to making their own alterations to male condoms to make them fit their clients or turn to alternative barrier methods for protection. In examining condom size in relation to condom usage amongst sex workers, this study aims to inform further research on condom size as a barrier to condom use and as a catalyst for increased condom use amongst vulnerable populations and the greater global population.

Chapter Four: Conclusion & Public Health Implications

Conclusion

The findings of this study indicate that sex workers of all genders view limited condom sizes as a barrier to increased condom use in their sexual interactions with clients. Consistent condom use continues to pose a challenge for female, male and transgender sex workers in Cape Town. Study participants also reported that using condom sizes that fail to fit the varying penis sizes of clients has resulted in experiences of condom breakage or slippage, resulting in negative attitudes towards male condoms on the part of clients as reported by participants. To date, there has been a lack of formidable research investigating condom size and condom failure as a barrier to increased condom use amongst sex worker populations. Given the precarious nature of sex work and exposure to health risks in the sex work industry, sex workers are a highly vulnerable group that would benefit from an expansion of condom size options.

The correct and consistent use of male condoms has proven to be highly effective in the prevention of HIV and STI transmission and the prevention of unintended pregnancy. The fit and feel of male condoms has presented as one of the leading barriers to consistent condom use (Reece et al., 2009). Multiple studies conducted across countries have indicated that men often report condom fit as being either too long, too short, too loose, or too tight (Potter & De Villemeur, 2003). Other studies have also suggested that men who report poor condom fit are more likely to report condom errors and condom failure, including breakage and slippage, as well as problems holding an erection and reduced sexual sensation (Crosby et al., 2010; Graham et al., 2006). Men who report issues with condom fit and feel are also more likely to discontinue use of condoms in the middle of intercourse or discontinue condom use altogether.

In the United States, male condoms are produced in a remarkably limited range of sizes (Richters et al., 1995). Although they have not been approved in the United States, custom-fitted male condoms are currently available on the European market. Initial sales of TheyFit condoms found that 87.6% of condoms purchased fell outside the typical size range approved by the American Society for Testing and Materials (ASTM), suggesting that variability of penis sizes far exceeds the condom options currently available. In a 2008 study conducted in the United States, researchers found that condom failure was lower for men who used fitted condoms specific to their individual penile dimensions than for those who used standard condoms during intercourse (Reece et al., 2008).

These findings suggest that diversification of condom sizes could result in increased usage of condoms and a decline in the experiences of condom discomfort and condom failure amongst condom users. In the context of this study, sex workers reported that limited condom sizes and experiences of condom discomfort due to ill-fitting condoms contributed to client's negative perceptions of male condoms and resistance to condom use. However, sex workers believe that the introduction of expanded condom sizes could prompt clients with existing prejudices and negative attitudes towards condoms to reevaluate their decision to not use condoms. Sex workers also indicated that they believe addressing the issue of condom size would provide them with a valuable tool to protect themselves from negative health outcomes including exposure to HIV and other sexually transmitted infections and unplanned pregnancies.

Study results found that condom size oftentimes resulted in incorrect condom use or non-use altogether. In the absence of condoms that fit, sex workers resort to engaging in non-penetrative sex acts or unprotected vaginal or anal intercourse with clients. Some sex workers reported altering male condoms to fit the penile dimensions of certain clients while other sex workers reported using female condoms for anal sex or having male clients wear female condoms on their penises during vaginal sex. Combined with regular occurrence of condom failure, incorrect condom use or non-use exposes sex workers to various health risks including increased risk of HIV and STI acquisition, unwanted pregnancies, and pregnancy terminations.

This study highlights that expanding the condom market to include a greater variation in sizes could result in a shift in the power dynamics of condom negotiation between sex workers and clients. The availability of a greater variation of male condom sizes would enable the agency of sex workers to negotiate condom use with clients. Furthermore, client arguments against condom use with sex workers during condom negotiations would be invalidated due to the presence of male condoms that fit and limit discomfort. Clients would no longer be able to use condom size and complaints about fit as a reason for not wanting to use condoms during transactions with sex workers.

Although previous studies have been conducted to explore condom fit and feel, condom failure, and barriers to condom usage amongst sex workers, this study fills a research gap by examining issues of condom size relative to condom usage amongst a vulnerable population. This study expands on existing literature regarding penis size, condom size, condom failure, and condom usage by addressing these issues in the context of a highly vulnerable group. By identifying

condom size as a barrier to condom use amongst sex workers, the results of this study have the potential to inform future research on the need for expanded condom size options as a public health strategy to promote increased condom usage and reduce the burden of HIV and unintended pregnancies.

Another aspect of condom use not directly explored in this study but that appeared in numerous interviews is the issue of condom fatigue amongst the general population. The South African government has recently declared that the country is experiencing "condom fatigue", reporting higher HIV rates after years of progress in combatting the spread of the virus (BBC, 2014). In an effort to combat increasing resistance to condom use and encourage condom use amongst non-users or defaulters, the government announced that they will be distributing free condoms in colors and flavors to meet the demands of the populous that have a growing aversion to the government-branded Choice condoms. In study interviews, sex workers indicated a preference for male condoms available in colors and flavors, and reported that clients who are willing to use male condoms also have a preference for condoms with these features. In an effort to keep condoms sexy and innovative to avoid condom fatigue amongst users, it is imperative that policy makers continue to evaluate the perceptions of condom use in the population to see how they can continue to successfully encourage condom use.

Public Health Implications

Condom size is a critical issue amongst sex workers that is may be overlooked by public health practitioners and policy makers who regulate condom regulation and approval processes. On a larger scale, the introduction of expanded condom size options to the South African and global condom markets has the potential to transform perceptions of male condoms amongst current non-users and increase condom usage rates. In order to combat rising HIV rates and condom fatigue, it is imperative that policymakers approach the diversification of condom sizes as an innovative concept and an opportunity to increase condom usage.

The findings of this study support the findings of previous studies that found that occurrences of condom failure and condom discomfort affect condom use. A "one size fits all" approach to condom manufacturing, education and health interventions, and distribution systems fails to meet the needs of males with a wide range of penis sizes. Amongst vulnerable populations who are at increased risk for negative health outcomes due to inconsistent condom use and greater occurrences of condom failure, the introduction of a wider range of condom sizes could positively alter attitudes towards condoms and condom usage practices and amongst sex workers and clients

In the context of the sex work industry, more prospective research is needed to obtain more accurate estimations of experiences of condom breakage and slippage during sexual interactions between sex workers and clients. Prospective research should also focus on negative health outcomes experienced by sex workers and/or clients that result from condom breakage or slippage to measure health risks attributable to condom failure. Future studies amongst sex

worker populations also need to distinguish between condom failures attributable to incorrect use and condom failures attributable to issues related to fit, feel and penis size to properly inform future health interventions tailored to sex workers. It would be beneficial to pilot fitted-male condoms amongst a sex worker population to determine their acceptance amongst sex workers and clients and to measure attitudes towards fitted-male condoms in comparison to standard male condoms.

Proper condom use needs to continue to be a priority of education programs and clinic-based interventions in order to ensure people know how to properly apply, use, and dispose of condoms to prevent incorrect condom use. However, condom failure and condom non use issues due to limited condom size relative to the wide range of penis sizes cannot be addressed through counseling of condom users. This requires an overhaul of the standards that currently govern the development, quality control, testing, manufacturing, and approval of condoms for consumer sales.

In order for a wider range of condom sizes to be available for distribution in South Africa and countries around the world, international regulating organizations need to modify their international standards that have resulted in the limitation on condom size. Since South Africa lacks its own condom regulatory agency, they rely on standards set by regulatory bodies in the United States and the European Union. At present, custom-fitted male condoms in 95 sizes are available for sale in the European Union and the manufacturer is currently pursuing regulatory approval in the United States for future distribution. In January 2014, TheyFit was awarded a $224,863.00 National Institute of Health grant to test the 95 different sizes, a preliminary step in

the quest for approval for U.S. distribution from the Food and Drug Administration (Soltis, 2014). The approval and distribution of custom-fitted male condoms would open up condom markets in countries around the world for an expanded range of condom sizes, which could have a positive impact on combatting the transmission of HIV and preventing unintended pregnancies.

Organizations that support and provide health services for sex workers need to ensure that sex workers are provided with an adequate education around proper condom usage to minimize condom failure that results from incorrect condom use. These service providers and advocates also need to enhance health interventions that target client education around the benefits of condom use to dispel commons misconceptions about condoms. Organizations that advocate for sex workers' rights and health services should empower sex workers to advocate for the diversification of male condom sizes as an innovative public health intervention to increase the acceptance and use of condoms in the sex work industry.

Policymakers need to recognize that condom size is a barrier to increased condom use, and that the condom market at present has reached a point of oversaturation resulting in declining condom use. Diversifying condom options by expanding the number of sizes available has the potential to reinvigorate the condom market and encourage new users and non-users of the benefits of condom use. Future research into issues of condom size amongst the general population and vulnerable populations will help to emphasize the need to address condom size diversification as a public health priority. By expanding the number of male condom sizes available in South Africa, policymakers have the potential to transform condom usage practices

amongst sex workers and the wider population, resulting in a decline in the prevalence of HIV/AIDS, sexually transmitted infections, and unintended pregnancies.

References

Albert, A. E., Warner, D. L., Hatcher, R. A., Trussell, J., & Bennett, C. (1995). Condom use among female commercial sex workers in Nevada's legal brothels. *American Journal of Public Health*, *85*(11), 1514-1520.

Albert, A. E., Warner, D. L., & Hatcher, R. A. (1998). Facilitating condom use with clients during commercial sex in Nevada's legal brothels. *American Journal of Public Health*, *88*(4), 643-646.

Baral, S., Beyrer, C., Muessig, K., Poteat, T., Wirtz, A. L., Decker, M. R., ... & Kerrigan, D. (2012). Burden of HIV among female sex workers in low-income and middle-income countries: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, *12*(7), 538-549.

BBC News (2014, April 2). *South Africa to use flavoured condoms to tackle HIV*. Retrieved April 6, 2014 from http://www.bbc.com/news/world-africa-26853788.

Bradley, J., Rajaram, S. P., Moses, S., Boily, M. C., Ramesh, B. M., Isac, S., ... & Alary, M. (2012). Why do condoms break? A study of female sex workers in Bangalore, south India. *Sexually transmitted infections*, *88*(3), 163-170.

Cecil, M., Nelson, A., Trussell, J., & Hatcher, R. (2010) If the condom doesn't fit, you must resize it. *Contraception*, 82, 489-490.

Cecil, M. (2012). Examination of the initial sales of an expanded range of condom sizes beyond ISO and ASTM standards. Paper presented at the XIX International AIDS Conference, Washington D.C.

Cecil, M., Warner, L., & Siegler, A. J. (2013). Online purchases of an expanded range of condom sizes in comparison to current dimensional requirements allowable by US national standards. *Sexual health*, *10*(5), 408-413.

Choice Condoms. (N.D.). *Alibaba.com.* Retrieved January 24, 2013, from www.alibab.com/product-gs/272310883/choice_condoms.html.

Crosby, R., Yarber, W., Graham, C., & Sanders, S. (2010). Does it fit okay? Problems with condom use as a function of self-reported poor fit. *Sexually Transmitted Infections*, 86, 36-38.

Crosby, R. A., Yarber, W. L., Sanders, S. A., Graham, C. A., McBride, K., Milhausen, R. R., & Arno, J. N. (2007). Men with broken condoms: who and why?. *Sexually transmitted infections*, *83*(1), 71-75.

Crosby, R., Yarber, W. L., Sanders, S. A., Graham, C. A., & Arno, J. N. (2008). Slips, breaks and 'falls': condom errors and problems reported by men attending an STD clinic. *International Journal of STD & AIDS*, *19*(2), 90-93.

de Graaf, R., Vanwesenbeeck, I., van Zessen, G., Straver, C. J., & Visser, J. H. (1993). The effectiveness of condom use in heterosexual prostitution in The Netherlands. *AIDS*, *7*(2), 265-270.

Fraser-Hurt, N., Zuma, K., Njuho, P., Chikwava, F., Slaymaker, E., Hosegood, V. & Gorgens, M. (2011) The HIV epidemic in South Africa: what do we know and how has it changed?. (Commissioned by SANAC).

Ghimire, L., Smith, W. C. S., van Teijlingen, E. R., Dahal, R., & Luitel, N. P. (2011). Reasons for non-use of condoms and self-efficacy among female sex workers: a qualitative study in Nepal. *BMC Women's Health*, *11*(1), 42.

Graham, C. A., Crosby, R., Yarber, W. L., Sanders, S. A., McBride, K., Milhausen, R. R., & Arno, J. N. (2006). Erection loss in association with condom use among young men attending a public STI clinic: potential correlates and implications for risk behaviour. *Sexual Health*, *3*(4), 255-260.

Grov, C., Wells, B. E., & Parsons, J. T. (2013). Self-reported penis size and experiences with condoms among gay and bisexual men. *Archives of sexual behavior*, *42*(2), 313-322.

Higgins, J. A., Tanner, A. E., & Janssen, E. (2009). Arousal loss related to safer sex and risk of pregnancy: Implications for women's and men's sexual health. *Perspectives on sexual and reproductive health*, *41*(3), 150-157.

Jewkes, R., Nduna, M., Levin, J., Jama, N., Dunkle, K., Puren, A., & Duvvury, N. (2008). Impact of stepping stones on incidence of HIV and HSV-2 and sexual behaviour in rural South Africa: cluster randomised controlled trial. *BMJ: British Medical Journal*, *337*.

Jie, W., Xiaolan, Z., Ciyong, L., Moyer, E., Hui, W., Lingyao, H., & Xueqing, D. (2012). A qualitative exploration of barriers to condom use among female sex workers in China. *PloS one*, *7*(10), e46786.

Potter, W. D., & de Villemeur, M. (2003). Clinical breakage, slippage and acceptability of a new commercial polyurethane condom: a randomized, controlled study. *Contraception*, *68*(1), 39-45.

Randolph, M. E., Pinkerton, S. D., Bogart, L. M., Cecil, H., & Abramson, P. R. (2007). Sexual pleasure and condom use. *Archives of sexual behavior*, *36*(6), 844-848.

Reece, M., Herbenick, D., Sanders, S. A., Monahan, P., Temkit, M. H., & Yarber, W. L. (2008). Breakage, slippage and acceptability outcomes of a condom fitted to penile dimensions. *Sexually Transmitted Infections*, *84*(2), 143-149.

Reece, M., Herbenick, D., & Dodge B. (2009). Penile dimensions and men's perception of condom fit and feel. *Sexually Transmitted Infections*, 85, 127-31.

Reece, M., Briggs, L., Dodge, B., Herbenick, D., & Glover, R. (2010). Perceptions of condom fit and feel among men living with HIV. *AIDS Patient Care and STDs*, *24*(7), 435-440.

Richters, J., Gerofi, J., & Donovan, B. (1995). Are condoms the right size (s)? A method for self-measurement of the erect penis. *Venereology*, *8*(2), 77-81.

Richter, M., Chersich, M., Temmerman, M., & Luchters, S. (2013). Characteristics, sexual behaviour and risk factors of female, male and transgender sex workers in South Africa. *SAMJ: South African Medical Journal*, *103*(4), 226-251.

Sanders, S. A., Yarber, W. L., Kaufman, E. L., Crosby, R. A., Graham, C. A., & Milhausen, R. R. (2012). Condom use errors and problems: a global view. *Sexual Health*, *9*(1), 81-95.

Shisana, O, Rehle, T, Simbayi LC, Zuma, K, Jooste, S, Zungu N, Labadarios, D, Onoya, D et al. (2014) South African National HIV Prevalence, Incidence and Behaviour Survey, 2012. Cape Town, HSRC Press.

Smith, A., Jolley, D., Hocking, J., Benton, K., & Gerofi, J. (1998). Does penis size influence condom slippage and breakage? *International Journal of STD & AIDS.* 9(8): 444-7.

Soltis, Andy. (2014, January 10). *Feds spend $224K for "custom fit" condoms study*. New York Post. Retrieved from http://nypost.com/2014/01/10/feds-spending-224k-for-study-of-custom-fitted-condoms/.

South African National AIDS Council (SANAC), (2013). *Estimating the size of the sex worker population in South Africa, 2013*. Retrieved from Impact Consulting website: http://www.sanac.org.za/publications/reports/cat_view/7-publications/9-reports

Sparrow, M. J., & Lavill, K. (1994). Breakage and slippage of condoms in family planning clients. *Contraception*, *50*(2), 117-129.

Thomas, R. M., Plant, M. A., Plant, M. L., & Sales, J. (1990). Risk of HIV infection among clients of the sex industry in Scotland. *BMJ: British Medical Journal*, *301*(6751), 525.

UNAIDS. (2013). Global Report: UNAIDS Report on the Global AIDS Epidemic 2013. Geneva, Switzerland: UNAIDS.

van Loggerenberg, F., Dieter, A. A., Sobieszczyk, M. E., Werner, L., Grobler, A., Mlisana, K., & CAPRISA 002 Acute Infection Study Team. (2012). HIV prevention in high-risk women in South Africa: condom use and the need for change. *PloS one*, *7*(2), e30669.

Varga, C. A. (1997). The condom conundrum: barriers to condom use among commercial sex workers in Durban, South Africa. *African Journal of Reproductive Health*, 74-88.

Appendix A: Interview Guide for Interviews with Sex Workers (Assessing the feasibility of custom-fitted male condoms as a sexual health intervention in Cape Town, South Africa)

Hello, my name is _____. I am working with a team from Emory University in the United States and the HSRC in South Africa to learn more about current condom use amongst Commercial Sex Workers in Cape Town. We are conducting interviews with sex workers to learn about their experiences with condoms in their work and to determine if there is a demand for alternative condom options (custom-fitted male condoms). Your experiences and contribution to this study will provide a great deal of insight into how you and your colleagues incorporate condoms into your work, how you negotiate condom use with your clients, and help us find out if there is a need amongst your profession to expand condom options.

Custom-fitted male condoms are latex condoms available in many different length and girth combinations. Currently sold in the United Kingdom, custom-fitted male condoms marketed by TheyFit are available in 95 size combinations.

I would like to tape-record our discussion today, if that is OK. I am not able to write as fast as we speak and I do not want to miss any of the issues we discuss. Our discussion today will be completely confidential. Any research documents relating to this discussion will not have any mention of your name or other people who took part in this study. Do you have any questions? Is it OK for me to tape-record our discussion?

- How long have you been working as a sex worker?
    - Probe: Do you have another job?
- Can you tell me about the last time you used a condom in your work?
- What are your personal feelings about condoms?
    - Probe: In your work? In your other sexual relationships?
    - Probe: What kinds of condoms do you use?
    - Probe: What would you change about the condoms that you are currently using to make them better?

- When you are with a client, how do you decide whether or not you are going to use a condom?
    - Probe: How does your decision to use condoms in your work affect your business?
    - Probe: Share with me a negative reaction you had from a client when you tried to get him/her to use a condom.

- Tell me about some of the biggest challenges you face incorporating regular condom use into your work.
    - Probe: What are some of the main reasons clients don't want to use condoms?
    - Probe: What are some of the main reasons you don't want to use condoms?

- What do you think could encourage clients to use condoms?

- Probe: What do you think your clients would change about the condoms you use to make them better?

- Can you share with me some experiences where you used condoms with clients and the condom broke or slipped/fell off?

Recently in the UK, new condoms have been made available on the market for men who do not fit standard sized condoms. (Condom Display Board)

- What do you think about the idea of using custom fitted condoms with your clients?
- How do you think your clients would react to using a custom-fitted male condom that would better fit his penis/your penis?
- Custom-fitted male condoms are available in lots of sizes and require the man to measure his own penis while aroused. How do you think your clients would respond to incorporating penis measurement into your foreplay/sexual encounter/time together?
- Do you think your clients would be more willing to use condoms if they had the option of using a condom that fit them better?
- Can you think of ways to make it more likely for your clients to use custom fitted condoms?
- After learning about these condoms, what do you think would be the best way to distribute these condoms?
- If available for sale in South Africa, how much do you think clients would pay for custom-fitted condoms? How much would you be willing to pay?

Closing Questions

- Is there anything else, aside from custom-fitted male condoms, that would encourage condom use among your clients?
- Is there anything else you wanted to add that is important for me to know?

Do you have any questions for me?

Thank you for your time. Your participation is greatly appreciated and is an invaluable contribution to our study.

Appendix B: Information Sheet for Interviews with Sex Workers

Information Sheet for
Interviews with Sex Workers

Who we are
Hello, I am a student from Emory University in the United States and I am working with the Human Sciences Research Council to conduct this study.

What we are doing
The purpose of this study is to explore the feasibility and willingness of incorporating custom-fitted male condoms into the practices of sex workers in Cape Town. Custom-fitted male condoms are like normal male condoms, but come in more sizes.

Your participation
We are asking you whether you will allow us to conduct one interview with you about your experiences with standard male condoms in your work and your interest in custom-fitted male condoms. During this interview, we will ask you about male condom use with clients, including male condom negotiations, barriers to male condom use, male condom availability and any experiences you may have had with male condom breakage or slippage. If you agree, we will ask you to participate in one interview, which will last approximately 60 minutes.

Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating in the research at any time by simply telling me that you don't want to continue. If you do this, there will be no penalties and you will not be prejudiced in any way.

If you agree to be interviewed, we would like your permission to record the interview in addition to taking notes, so that we don't miss any details of the information that you provide. After the interview, information from the tape will be transcribed (written down) and the recording will be destroyed. You are free to refuse to have the interview taped without any penalty. If you agree to have the interview recorded, you may ask for the recording to be stopped at any time if you do not want what you say to be recorded.

Please take as long as you like before you make a decision. If you have any questions regarding the study, please feel free to ask the interviewer. We will be happy to answer any question you have about the study.

Confidentiality
You will be required to sign a form indicating that you agree to participate in the study, but your answers will not in any way be associated with your name. All responses will be anonymous. The answers from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the ethics committee at the Human Sciences Research Council.

We are asking you to give us permission to tape-record the interview so that we can accurately record what is said.

Your answers will be stored electronically in a secure environment and used for research or academic purposes now or at a later date in ways that will not reveal who you are. All future use of the stored data will be subject to further Research Ethics Committee review and approval. Your answers will be linked to a fictitious code number or a pseudonym (another name) and we will refer to you in this way in the data, any publication, report or other research output.

Risks/discomforts
At the present time, we do not see any risk of harm from your participation. The risks associated with participation in this study are no greater than those encountered in daily life. The interviewer will ask you for personal information. You may feel uncomfortable answering these questions. You do not have to answer any questions you do not want to.

Benefits
There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to us in that we hope to promote an increased understanding about the feasibility and willingness of incorporating custom-fitted male condoms into the practices of sex workers in Cape Town

Study personnel will provide Sex Workers Education and Advocacy Taskforce (SWEAT) with results from the study in the form of a written report by the end of 2013.

Compensation
You will receive 50ZAR to compensate you for your time and participation.

Who to contact if you have been harmed or have any concerns
This research has been approved by the HSRC Research Ethics Committee (REC). If you have any complaints about ethical aspects of the research or feel that you have been harmed in any way by participating in this study, please call the HSRC's toll-free ethics hotline 0800 212 123 (when phoned from a landline from within South Africa) or contact the REC Administrator at the Human Sciences Research Council, on Tel 012 302 2012 from 08:00 – 16:00, or e-mail research.ethics@hsrc.ac.za .

If you have concerns or questions about the research you may email the project leader Roger Rochat rrochat@emory.edu

You may keep this information sheet

Appendix C: Informed Consent Sheet for Interviews with Sex Workers

Informed Consent Sheet for
Interviews with Sex Workers

Who we are
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What we are doing
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Please understand that **your participation is voluntary** and you are not being forced to take part in this study. The choice of whether to participate or not, is yours alone. If you choose not to take part, you will not be affected in any way whatsoever. If you agree to participate, you may stop participating in the research at any time by simply telling me that you don't want to continue. If you do this, there will be no penalties and you will not be prejudiced in any way.

If you agree to be interviewed, we would like your permission to record the interview in addition to taking notes, so that we don't miss any details of the information that you provide. After the interview, information from the tape will be transcribed (written down) and the recording will be destroyed. You are free to refuse to have the interview taped without any penalty. If you agree to have the interview recorded, you may ask for the recording to be stopped at any time if you do not want what you say to be recorded.

Please take as long as you like before you make a decision. If you have any questions regarding the study, please feel free to ask the interviewer. We will be happy to answer any question you have about the study.

Confidentiality
You will be required to sign a form indicating that you agree to participate in the study, but your answers will not in any way be associated with your name. All responses will be anonymous. The answers from your participation may be reviewed by people responsible for making sure that research is done properly, including members of the ethics committee at the Human Sciences Research Council.

We are asking you to give us permission to tape-record the interview so that we can accurately record what is said.

Your answers will be stored electronically in a secure environment and used for research or academic purposes now or at a later date in ways that will not reveal who you are. All future use of the stored data will be subject to further Research Ethics Committee review and approval. Your answers will be linked to a fictitious code number or a pseudonym (another name) and we will refer to you in this way in the data, any publication, report or other research output.

Risks/discomforts
At the present time, we do not see any risk of harm from your participation. The risks associated with participation in this study are no greater than those encountered in daily life. The interviewer will ask you for personal information. You may feel uncomfortable answering these questions. You do not have to answer any questions you do not want to.

Benefits
There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to us in that we hope to promote an increased understanding about the feasibility and willingness of incorporating custom-fitted male condoms into the practices of sex workers in Cape Town

Study personnel will provide Sex Workers Education and Advocacy Taskforce (SWEAT) with results from the study in the form of a written report by the end of 2013.

Compensation
You will receive 50ZAR to compensate you for your time and participation.

Who to contact if you have been harmed or have any concerns
This research has been approved by the HSRC Research Ethics Committee (REC). If you have any complaints about ethical aspects of the research or feel that you have been harmed in any way by participating in this study, please call the HSRC's toll-free ethics hotline 0800 212 123 (when phoned from a landline from within South Africa) or contact the REC Administrator at the Human Sciences Research Council, on Tel 012 302 2012 from 08:00 – 16:00, or e-mail research.ethics@hsrc.ac.za .

If you have concerns or questions about the research you may email the project leader Roger Rochat rrochat@emory.edu

Written Consent

- The purpose of the research and what taking part involves have been explained to me.
- I have had a chance to ask questions and to have them answered to my satisfaction.
- I am aware that I am free to choose whether or not to take part and that there will be no

penalties for me if I choose not to take part.

- I am aware that I may change my mind about being interviewed at any time and may stop the interview without any penalty.
- The reason for audio-recording the interview has been explained to me.
- I am aware that I am free to choose whether or not to allow the interview to be recorded and that I may still take part even if I do not agree to the interview being recorded.
- I am aware that I may ask for the recording of the interview to be stopped at any time.
- The measures that will be taken to make sure that the recording is kept confidential have been explained to me.
- The expected risks and discomforts associated with taking part have been explained to me.
- I am aware that taking part will not be of personal benefit to me.
- The measures that will be taken to make sure that the information that I give is kept confidential have been explained to me.
- I have been given telephone numbers that I may call if I have any questions or concerns about the research.

Signature of the witness certifying that informed consent has been given.

Study Participant Written Consent Name _____ Signature _____	 Date_____
Study Personnel Witness Name _____ Signature _____	 Date_____