Master’s Thesis

Condom Size Matters:
The Importance of Condom Fit in Safe and Pleasurable Penetrative Sex

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Abstract
The external condom has a high degree of utility in sexual health promotion, yet problems with nonuse and incorrect use of condoms among populations vulnerable to unintended pregnancy and sexually transmitted infections (STIs) persist. This paper uses critical interpretive synthesis (CIS) as a methodology to review the evidence that condom fit is predictive of sexual pleasure, product acceptability, and correct and consistent condom use behavior. The available literature assessing the relationships among condom use, sexual pleasure, and condom fit indicates the perception of poor condom fit is associated with reduced acceptability and pleasure ratings, lowered rates of correct and consistent condom use, and increased risk of condom failure. Existing theoretical work is built upon to propose a more comprehensive theoretical framework conceptualizing the mechanisms underlying these relationships, including penile and condom dimensions and contextual factors. Web search results and condom brand websites are subsequently analyzed regarding the amount and quality of size information provided suggesting that accessing reliable information about condom sizing can be difficult. Findings are integrated to provide recommendations for the condom industry and those working in the field of sexual health promotion, intended to aid these sectors in improving condom users’ knowledge about and access to appropriately sized condoms, for example, by conducting more collaborative cross-sector work regarding condom fit, in order to increase adherence to correct and consistent condom use as a preventive health behavior.
CONDOM SIZE MATTERS

Section I: Condom Use and Pleasure

Introduction

The external condom, also referred to as the male condom and most often just a condom, is a barrier device with a high degree of utility in sexual health promotion; it is the only method that provides protection against both pregnancy and many sexually transmitted infections (STIs), including human immunodeficiency virus (HIV) (Trussell, 2011; Warner et al., 2006; Weller & Davis, 2002). When used perfectly, condoms are 98% effective at preventing pregnancy, and are 82% effective with average use, meaning that 18 of 100 people who use only condoms as contraception will become pregnant each year (Office of Population Affairs, 2019). Condoms are compact and easy to carry, relatively inexpensive, and accessible at pharmacies, convenience stores, and online, making them a convenient method of contraception and protection against STIs.

However, among condom users, condoms are frequently used incorrectly and inconsistently (Paz-Bailey et al., 2005) and condom nonuse remains high; the majority of men and women ages 15-44 report not using a condom at last intercourse (Copen, 2017). Condom-less sex has been increasing among some groups especially at risk for STI transmission including young people (Witwer et al., 2018) and men who identify as gay or bisexual, among whom the availability of antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) has decreased concerns regarding HIV (Paz-Bailey et al., 2016). Accordingly, rates of three most common STIs (chlamydia, gonorrhea, and syphilis) have been increasing in recent years in the United States, particularly among the aforementioned demographic groups (Centers for Disease Control and Prevention, 2019). In order to better promote correct and consistent condom use, it is necessary to determine key and modifiable predictors of correct and consistent use so that both the condom industry and public health profession can appropriately address such variables.

Statement of Aims

This thesis will use critical interpretive synthesis (CIS) to review the literature pertaining to condom fit and assess whether condom fit is a key determinant of condom-related pleasure and is predictive of correct and consistent condom use outcomes. Findings will inform recommendations for the disciplines of public health and product design regarding condom education, distribution, and development.

Specific aims are to:

- Use CIS to review the literature pertaining to condom fit, with an emphasis on the theoretical implications of the literature, to assess whether condom fit is a key determinant of condom-related pleasure and is predictive of correct and consistent condom use outcomes.
Analyze the websites of condom manufacturers and vendors, health organizations, and popular press outlets, assessing both the range of sizes currently on the market and the quality and amount of information regarding condom dimensions available to consumers.

Develop specific recommendations for the condom industry and those working in sexual health promotion regarding condom education, distribution, and product development, in order to increase adherence to correct and consistent condom use as a preventive health behavior.

Methodology

This thesis will use CIS to integrate findings across studies due to its “explicit orientation towards theory generation” and its emphasis on iterative and dynamic procedures for question formulation, search strategy, and data selection, extraction, and synthesis (Dixon-Woods et al., 2006, para. 57.). This methodology is appropriate for the synthesis of quantitative and qualitative research and generally uses purposive sampling to select articles for inclusion based on theoretical relevance rather than adherence to methodological criteria (Dixon-Woods et al., 2006). CIS is particularly appropriate for developing theory and identifying new analytical constructs based on the methods, perspectives, and conclusions of the existing literature, rather than solely consolidating and summarizing findings (Ako-Arrey et al., 2016; Moat et al., 2013; Schaff & Topp, 2019). Given that this thesis will draw from the disciplines of medicine, public health, psychology, journalism, and product design and development, it is important that CIS is capable of integrating literature across multiple disciplines (Moat et al., 2013; Schaff & Topp, 2019;).

As is common in work employing CIS, the main criteria for article inclusion were topical and theoretical relevance, rather than study characteristics or rigor (Dixon-Woods et al., 2006). Given that the primary objective of CIS is on the development of theory, principles and methods of sampling common in qualitative research including theoretical sampling and theoretical saturation have been recommended (Dixon-Woods et al., 2006). PubMed, PSYCInfo, Scopus, and EMBASE were searched for articles to include in the initial review for the CIS analysis using keywords. All sources retrieved by database searching (N = 2,350, including duplicates) were screened for topical and theoretical relevance, resulting in a set of 47 distinct articles; reference chaining was used to identify further relevant articles (N = 7), bringing the total number of sources analyzed up to 54. Table 1 shows the detailed database search strategy.

Google was used to search popular press outlets, health information websites, and condom vendor websites for relevant articles and webpages. It is not possible to retrieve internet search results by their popularity nor their average positioning on result lists, therefore Google searches were limited to the top 100 search results for each search. Purposive sampling was used to identify relevant webpages, striving for theoretical saturation. The resulting set of sources (N = 62) was analyzed separately. Table 2 shows the detailed webpage search strategy. Data extraction involved writing short summaries of each article in the
purposive samples. Constant comparison techniques common in qualitative research (Glaser & Strauss, 1967) were then used to analyze findings across sources, for both the empirical and non-empirical sets of sources. Product dimensions reported on webpages were analyzed with regard to the quality of the information provided (i.e. clarity, comprehensiveness, consistency across sources) and the range of available condom sizes.

**Overview of Manuscript**

The remainder of Section I provides an overview of the literature regarding sexual pleasure during condom use. Section II presents the findings of the CIS analysis, examining the relationships among experiences of condom size and fit, penile dimensions, sexual pleasure, and condom use behavior. Existing predictors of condom use and nonuse are reviewed, with a specific focus on attitudes regarding the impact of condoms on sensation and pleasure. This section considers what comprises an “ideal” condom fit and argues that condom fit plays a critical role in the experience of sexual pleasure and correct and consistent condom use. Section III comprises a review of the current condom market and the degree to which reliable information about condom dimensions is available to consumers online. Section IV discusses the practical implications of the evidence, including specific recommendations for sexual health or education providers, condom manufacturers and vendors, and condom users themselves. Concluding remarks include a review of the theoretical implications of the CIS and website analyses and recommendations for future condom fit research.

**Pleasure and Condom Use**

Condom use varies by demographic factors including age, education, and relationship status and situational factors including attitudes toward condoms, perceived risk of contracting an STI or conceiving a pregnancy, and self-efficacy regarding condom use (Copen, 2017; England et al., 2016; Pollack et al., 2013; Shih et al., 2011). The perception of the comfort and reliability of condoms are key components of their acceptability to men (Grady et al., 1993). In particular, the perception that condom use will result in decreased sexual pleasure is considered by experts to be the main barrier to the uptake of condoms as a preventive health behavior (Siegler et al., 2018). Although historically sexual pleasure has received limited attention in public health, recent empirical research aimed at understanding condom nonuse has demonstrated that perceptions of condoms’ effects on the experience of sexual pleasure are an important determinant of condom use behavior (Graham, 2012). Studies exploring beliefs regarding the pleasurable capacity of condom-protected penetration among men and women have found that the most commonly reported “turn-off” regarding condoms is the perception of decreased sexual pleasure (Crosby, Milhausen et al., 2008) and that the impression that condoms interfere with sexual pleasure appears to be the primary reason for condom nonuse across genders and sexual orientations (Fennell, 2014; Calabrese et
al., 2012). Additionally, some condom users report condom-associated erection problems (CAEP; Graham et al., 2006).

Studies directly assessing the relationship between perception of condom-related pleasure and condom use behavior provide further evidence that perceived pleasure is strongly predictive of behavior. Randolph et al. (2007) examined the relationship between the perceptions of the pleasurability of condom-protected and condom-less penetration and actual condom use behavior among sexually experienced college students. Pleasure ratings for condom-protected penetration were significantly correlated with actual condom use for both men and women. However, the difference in pleasure ratings between condom-protected and condom-less penetration was larger for men than women and men who perceived a greater decrease in pleasure were less likely to have used condoms in the prior three months compared to those who perceived smaller reduction in pleasure (Randolph et al., 2007). Similarly, a study of condom use among adolescents found that the belief that condoms reduce sexual pleasure is associated with condom nonuse (Brown et al., 2018). Two studies of nationally representative data have also indicated that pleasure-related attitudes have strong effects on condom use and condom nonuse specifically among adolescents and young adults (Higgins & Wang, 2014, 2015). In both cases, pleasure-related attitudes were more strongly associated with condom use behavior than all sociodemographic or sexual history factors.

The identification of perceived and experienced sexual pleasure as key determinants of condom use has prompted researchers to investigate the predictors of sexual pleasure during condom-protected penetration. Findings from a large daily diary study of event-level factors associated with the experience of sexual pleasure during condom-protected vaginal intercourse among heterosexual men ages 18-24 indicate a number of event-level characteristics significantly predict ratings of sexual pleasure (Hensel, Stupiansky, Herbenick et al., 2012; Hensel, Stupiansky, Reece et al., 2012). Two separate analyses of vaginal penetration events during which condoms were used for the entire time suggest that condom-protected sexual pleasure is positively associated with longer duration and higher intensity of intercourse, greater perceived erection hardness, greater perceived general condom comfort, and ejaculation. These analyses also both indicate that having difficulty maintaining an erection and partner reports of discomfort are associated with reduced pleasure ratings.

These two sets of analyses reported some differences in findings with regard to predictors of sexual pleasure during condom use (Hensel, Stupiansky, Herbenick et al., 2012; Hensel, Stupiansky, Reece et al., 2012). Analyses of a sample of 2,623 events reported that longer perceived penis length and having sex with a main partner were also predictive of higher pleasure ratings while using only condoms as a contraceptive method and greater perceived condom tightness and looseness all were associated with decreased reported pleasure (Hensel, Stupiansky, Reece et al., 2012). However, a larger analysis of 6,325 events found that both receiving oral sex from a partner and performing oral sex on a partner prior to
vaginal penetration were associated with higher pleasure ratings, while perceived penis length, dual birth control use, relationship type, and condom tightness and looseness were not predictive of pleasure ratings (Hensel, Stupiansky, Herbenick et al., 2012). These findings are somewhat inconclusive, simultaneously demonstrating the complexity of the relationship between condom use and perceived sexual pleasure and suggesting additional research into the determinants of pleasure during condom-protected penetration is warranted.

Other researchers have assessed the predictors of sexual pleasure during condom-protected penetration among men who have sex with men (MSM), especially young MSM. Arrington-Sanders et al. (2013) developed a sexual health focused conceptual framework of the relationship between condom use and sexual pleasure informed by their qualitative study of sexual pleasure in young MSM. They found that emotional factors (e.g. connectedness with others) and physical factors (e.g. erectile problems) mediated the relationship between condom use and sexual pleasure during anal penetration, while event characteristics such as the use of lubricant or specific sexual positions moderated the relationship. Similarly, Crosby and Mena (2017) assessed the relationship between sexual pleasure and condom-protected penetration among young Black MSM. Three variables were found to predict the experience of sexual pleasure during condom-protected anal penetration: discussing condom use with their sex partners was associated with increased pleasure, whereas being the insertive partner and scoring higher on internalized homophobia were associated with lower reported pleasure ratings. Notably, men who experienced higher levels of pleasure were less likely to report any recent condomless anal sex.

The demonstrated relationship between perceived sexual pleasure and condom use has led researchers to recommend that sexual health promotion communication campaigns and behavioral interventions targeting condom use acknowledge the importance of pleasure and the pleasurable aspects of condoms by addressing and emphasizing sexual pleasure during condom use (Arrington-Sanders et al., 2013; Crosby & Mena, 2017). Scott-Sheldon et al. (2006) asked a sample of young men, both “heterosexual” men and men who have sex with men (MSM), two groups presented by the researchers as mutually exclusive, to list thoughts, feelings, or ideas that came to mind when thinking about condoms (p. 751). Half of the thoughts of the overall sample were sexual or sensory in nature, rather than regarding safety or pregnancy or disease prevention; the thought-listing of the MSM subsample included an even higher proportion of sexual or sensory thoughts. Based on these findings, the authors suggest that condom promotion interventions should focus more on the sexual and sensory aspects of condom use, especially those targeting MSM. Similarly, Philpott (2006) argue that promoting the pleasurable aspects of condom use in public health campaigns increases campaign efficacy based on a review of campaigns that eroticized safer sex behaviors, including barrier use.
Section II: Condom Size and Fit

Overview of Sources

The analyzed sources retrieved from databases (54) were primarily peer-reviewed articles reporting findings from quantitative studies (44) including one clinical trial, with small numbers of qualitative studies (2) and systematic reviews (2). Other sources were documents published in scientific journals, specifically commentaries (2), letters (2), and brand or product announcements (2). The earliest source was published in 1987, the most recent in 2019, and the majority of sources (43) were published since 2000.

Although some sources examined multiple genders’ experiences with condoms, the majority were restricted to male participants. Some of these focused exclusively on men who have sex with women (MSW) or men who have sex with men (MSM), while others included participants of multiple sexual orientations. All studies that defined their participants as heterosexual, MSM, or MSW presented these groups as mutually exclusive, rather than accounting for men who have sex with multiple genders. While some studies included multiple sex acts in their analyses, others restricted their analyses to specific acts such as vaginal penetration, anal penetration (insertive or receptive), and/or oral penetration. Many study samples included mainly White participants, while others included racially diverse samples or focused specifically on people of color, especially young Black men. Finally, some studies specifically examined group differences with regard to penile dimensions, condom attitudes, behaviors, and condom fit, especially across age and racial categories.

Primarily, sources focused on the relationships among condom users’ complaints, attitudes, and condom use, while some also considered how penile dimensions factor into these relationships. Two articles included theoretical models regarding condom use. Many researchers argued that condom fit influences condom use behavior via influencing the acceptability of condoms, but most did not name experiences of or expectations of sexual pleasure as component parts of condom acceptability.

The remainder of this section provides an overview of the literature on condom fit and builds a theoretical argument that condom fit influences condom efficacy not only by directly affecting the risk of condom failure but also by impacting experiences of and expectations of sexual pleasure and the acceptability of condoms, ultimately influencing a variety of condom use behaviors. After a description of the origins of attention to condom fit among researchers and manufacturers, there will be an overview of condom users’ complaints related to condom comfort, demonstrating that a sizable proportion of condom users report problems with fit. The significance of condom fit problems will then be addressed by connecting condom fit complaints to condom attitudes, acceptability, use, and efficacy. The next subsection examines the evidence that penile dimensions play a significant role in condom fit, after which the question of what comprises the “right” or “ideal” condom for an individual is considered in light of
findings from studies examining custom-fitted condom interventions, condom seeking behavior, and product availability and variability over time.

**Origins of Attention to Condom Fit**

The genesis of medical discussion regarding condom fit begins in the late 1980s with the recommendation that manufacturers increase the range of available condom sizes. In a commentary in *JAMA* on “Sex in the Age of AIDS,” Goldsmith (1987) wrote that only two condom sizes were then available in the United States, but that speakers at a conference from the Centers for Disease Control (CDC), American Social Hygiene Association (ASHA) and Family Health International (FHI) had recommended that three or four sizes be made available “to ensure good fit for penises of various configurations,” indicating awareness that penile dimensions vary and therefore differently sized products may be warranted (p. 2262).

That same year, the first quantitative study on condom fit was conducted in Australia, providing the first empirical evidence that condom fit is a key variable in condom use behavior (Ross, 1987). Clinic-attendees, all MSM, were provided with condoms and lubricant and then later asked their impressions; 27% reported the condoms were too small, while 3% indicated they were too large. Importantly, researchers found that condoms rated as too small were significantly more likely to break than those that were not rated as too small, leading the authors to conclude that the “effectiveness of condoms is intimately associated with appropriate size” and thus “advice on use of an appropriate condom size is central to its prophylactic effectiveness” (p. 877). This assertion that condom effectiveness is dependent on condom fit and the subsequent recommendations to expand the range of available condom sizes and for sexual health promoters to assist in condom selection are echoed throughout the following three decades of research on condom fit.

During this time, manufacturers also became increasingly attentive to condom fit in response to consumer complaints. A 1989 announcement in *Contraceptive Technology Update* explains that two American condom manufacturers had recently introduced larger sized condoms in response to reports from consumers that condoms were too small: Mentor’s “Magnum,” was 20 to 25% larger than the average contemporary condom, meanwhile Mayer’s “Maxx” was reported to be 2.3 inches at its widest, and 8.27 inches long (“Large-Sized Condoms,” 1989). Notably, this announcement does not explicitly discuss the public health significance of the increase in size range, only that consumers had requested larger sizes. Comparing this announcement with a contemporary one in the German pharmaceutical journal *Deutsche Apothekerzeitung* (2016) reveals much about the trajectory of condom fit research and product availability over time. Not only does the announcement refer, without citations, to studies that have shown condoms to be insufficiently sized for some men and that fit problems contribute to condom failure, the German condom brand it announces, MY.SIZE, is produced in seven different sizes. This is a
threefold increase in size availability compared to the choices on the market in the late 1980s, and more than the three to four sizes that the public health experts of the time were recommending be eventually produced (Goldsmith, 1987).

**Description of Condom Complaints Related to Fit**

Condoms impact the sensual aspects of sexual experience in two main ways: 1) condoms reportedly cause actual pain and discomfort, and 2) condoms reportedly dull sensations during condom-protected penetration (Crosby et al., 2013). In the first case, condoms interfere with the experience of sexual pleasure through the introduction of negative physical sensations into sexual events. In the second, condoms are perceived to reduce users’ intensity of sexual pleasure through the loss of pleasurable sexual sensations (Anstee et al., 2019). An alternate theorized relationship between condoms and sexual pleasure considers the possibility that poor-fitting condoms “create anxiety” about condom failure including slippage or breakage which may “detract from sexual pleasure” (Graham et al., 2006, p. 259). As previously discussed, complaints from men regarding condoms have been attended to by both researchers and manufacturers in order to improve condom acceptability and efficacy. The objective of this section is to explain how problems regarding condom fit factor into those complaints, focusing specifically on how condom fit influences the experience of sexual pleasure during condom-protected intercourse.

Studies assessing complaints regarding condom fit revealed a range of complaints related to condom fit. While one study reported a fit problem prevalence of only 15.5% among a large sample of MSW ages 18–69, the majority of studies reported that approximately 30 to 45% of men experience condom fit problems across racial groups and sexual orientations (Crosby et al., 2007; Crosby et al., 2009; Crosby et al., 2010; Dodge et al., 2010; Graham et al., 2016; Reece et al., 2010; Reece et al., 2007). One study among predominantly White MSW found over half of their sample of 789 men reported problems with condom fit (Reece et al., 2009). Table 2 displays the variety and prevalence of condom users’ complaints regarding fit across sources.

The most frequent complaint across all studies and various age groups and sexual orientations was that condoms are too tight (Smith et al., 1999; Dodge et al., 2010). This finding was consistent across samples with varying demographic compositions including young Black MSW (Crosby et al., 2004), predominantly White heterosexual college students (Crosby et al., 2005; Yarber, Graham et al., 2007), both younger and older MSM (Grov et al., 2013; Reece et al., 2007), and men living with HIV (MLWH) (Reece et al., 2010). The percentage of men reporting condoms to be too tight ranged from 18.5% among a racially diverse sample of British men (Tovey & Bonell, 1993) to over 30% among samples including predominantly White MSW (Crosby et al., 2005; Dodge et al., 2010; Reece et al., 2009; Richters et al., 1995) and among the Black British men in the study conducted by Tovey and Bonell (1993), 32.9% of whom reported condoms to be too tight, compared to 13.3% of the White men in the sample. On the other
hand, the percentage of men reporting condoms to be too loose was generally around 10 to 15% (Potter & de Villemeur, 2003; Reece et al., 2007; Reece et al., 2009; Reece et al., 2010; Richters et al., 1995). Some of the men who complained of tightness also complained that condoms broke too easily (Crosby et al., 2004; Higgins & Estcourt, 1993; Tovey & Bonell, 1993).

The percentage of men reporting condoms to be too short and/or that the y do not fully cover the penis ranged from 10 to 20%, whereas fewer men (7–17%) reported condoms to be too long, even though more (15–40%) reported that some material is left unrolled at the base when they use condoms (Potter & de Villemeur, 2003, Reece et al., 2007; Reece et al., 2009; Reece et al., 2010). This suggests that the extra unrolled condom is found to be less problematic to men than when condoms are perceived not to fully cover the penis. This difference in perception is logical because if a penis is not fully covered, then the condom user is at a higher risk for STI exposure. For example, a participant in a qualitative study among young Black MSW reported that he got genital warts because the condom did not fully cover his penis (Crosby et al., 2004).

Collectively, the available literature suggests that a significant minority of men, across age groups, sexual orientations, and racial groups, experience condom fit problems. While the most common problem is the perception that condoms are too tight, the literature indicates a wide variety of condom fit problems have been reported by condom users.

**Condom Complaints Regarding Pleasure and Erections**

The majority of studies assessing men’s experiences of condom fit considers how condom fit may reduce condom acceptability without explicitly mentioning sexual pleasure as a factor in that relationship (e.g. Reece et al., 2007; Reece et al., 2009; Tovey & Bonell, 1993). However, several studies assessed condom-associated erection problems (CAEP) and a smaller number assessed the impact of condoms on sexual pleasure and/or orgasm separate from CAEP. Studies’ findings related to CAEP will be described prior to those considering pleasure separately from CAEP. CAEP indicate condoms’ interference in the experience of sexual pleasure and are predictive of condom use behavior and health outcomes. One study assessing condom behavior found that men who reported CAEP during penetration were approximately twice as likely to report removing condoms before the end of intercourse (Yarber, Crosby et al., 2007). Additionally, studies have suggested that CAEP play a critical role in condom slippage and potentially also attitudes towards condoms and future condom use behavior (Graham et al., 2006; Yarber, Crosby et al., 2007).

Studies that assessed both condom fit and CAEP found that problems with condom fit were significantly associated with CAEP (Crosby et al., 2010; Graham et al., 2016). For example, Graham et al. (2006) found that among men attending a public Midwestern STI clinic, men who reported problems with “condom fit/feel” were significantly more likely to report erection loss when using condoms (53%)
than those who did not report such problems (30%). Similarly, Sanders et al. (2014) analyzed CAEP during condom application and during intercourse separately, finding that those who reported CAEP at any point during sexual activity were significantly less likely to report that their condoms fit “just right” than those who did not report CAEP. In later work, these researchers found that 49.8% of men who reported CAEP during condom application and 40.4% of those who reported CAEP during penetration endorsed condom fit problems specifically as a cause of CAEP (Hill et al., 2015).

Out of the 52 analyzed sources, only six original studies and one commentary discussed sexual pleasure separately from CAEP, and only two of those assessed the impact of condoms on the experience of orgasm. As previously discussed, perceived decreased sexual pleasure during condom use is a frequent condom complaint (Crosby, Yarber et al., 2008), a common reason given for condom nonuse (Fennell, 2014; Calabrese et al., 2012), and is predictive of actual condom use behavior (Brown et al., 2018; Randolph et al., 2007). Higgins and Wang (2014) found that pleasure-related attitudes had a greater effect on condom use behavior than all other variables among young adults, although they did not assess condom fit. Hensel, Stupiansky, Reece et al. (2012) found perceived condom fit is significantly predictive of sexual pleasure, contrasting with other findings of no association between condom fit and sexual pleasure (Hensel, Stupiansky, Herbenick et al., 2012).

Crosby et al. (2010) assessed both condom fit and sexual pleasure and found that MSW reporting condom fit problems were significantly more likely to report both reduced sexual pleasure and reduced ability to orgasm for both themselves and for their female partner. Qualitative research has also indicated a link between condom fit and sexual pleasure. One study of young Black MSW found reported decreased sexual pleasure as a result of condom fit problems (Crosby et al., 2004) and Crosby et al. (2013) found that a sample of mainly White heterosexual men and women’s descriptions of condom fit or feel problems frequently involved reporting decreased pleasure. Therefore, there is evidence to suggest that condom fit meaningfully contributes to the experience of sexual pleasure during condom-protected penetration.

It is important to note that all studies regarding pleasure and condom fit discussed thus far included only or predominantly heterosexuals in their samples, and thus less is known about the relationship between condom fit and sexual pleasure for queer individuals. However, Siegler, Rosenthal, Sullivan, Ahlschlager et al. (2019) are currently conducting a randomized three-way trial of fitted, thin, and standard condoms with equal numbers of MSW and MSM in their sample of men ages 18-54. The authors claim it to be the first condom trial to assess pleasure and preference as primary outcomes. Although some trial findings regarding condom failure have been published (Siegler, Rosenthal, Sullivan, Mehta et al., 2019) and will be discussed later, any findings regarding pleasure have yet to be published.
Significance of Condom Fit Problems

In 2007, the New York City Department of Health and Mental Hygiene (DOHMH) introduced the NYC Condom, the first municipality-branded condom in the United States (Burke et al., 2009). After a high-profile launch and wide-scale distribution, the program received “anecdotal reports from organizations that the public wanted DOHMH to also distribute larger-size condoms for free” (Burke et al., 2009, p. 2178). The DOHMH subsequently conducted a two-phase survey to assess awareness of and experience with NYC condoms and demand for alternative condoms. In the first phase, they surveyed individuals at NYC public events “catering to populations at high risk for HIV/STDs (e.g., men who have sex with men, blacks, and Hispanics)” (Burke et al., 2011, p. 750) and found that 14% of respondents wanted larger-sized condoms to be distributed, and slightly higher demand for extra-strength (18.2%) and ultra-thin (22.3%) (Burke et al., 2009). The most common reasons respondents gave for naming larger-sized condoms were that larger condoms feel better, are more comfortable, or standard-sized condoms are too small (Burke et al., 2009). When a similar study was conducted among an STI clinic population, larger-sized condoms were the most commonly requested alternative (28%), followed by ultra-thin (21%) and extra-strength (16%) (Burke et al., 2011). Importantly, these respondents named additional reasons for wanting larger-sized condoms in addition to better comfort and feel, including better protection against HIV and other STIs and more reliable/breaks less.

These reported reasons for preferring larger condoms encapsulate the public health significance of condom fit; for some individuals, condom fit has a meaningful impact both on condom acceptability (e.g. perceptions of condom-related sensations) and condom performance (e.g. breakage). A survey of condom preferences among MSM and MSW found that favorability decreased when participants perceived problems with fit (Smith et al., 1999). As previously discussed, condom fit problems decrease condom acceptability in part due to perceived decrease in pleasure and/or the introduction of discomfort and CAEP (Crosby et al., 2010; Crosby et al., 2013; Graham, 2016). However, condom breakage related to tightness or slippage related to looseness may also “contribute to negative images of condoms” because perceived reliability is a key component of product acceptability (Tovey & Bonell, 1993, p. 987).

Condom fit does not just impact acceptability; strong evidence exists that condom fit problems are also associated with lower rates of condom use and higher rates of condom errors during use. Only one study has assessed the relationship between condom fit problems and using condoms at all during sexual activity (Reece et al., 2010). The study sample included only MLWH, predominantly Black MSM, and found that reporting condoms to be too tight was associated with unprotected anal intercourse (UAI) among MSM and that reporting them to be too loose was associated with UAI among MSW. A greater number of studies have examined the relationship between fit problems and using condoms correctly during penetrative intercourse. While one study assessing condom use errors among a diverse sample of
MSW found that fit and feel were not associated with correct use (Crosby et al., 2014), other studies among Black and White MSM (Hernández-Romieu et al., 2014), Black MSW (Crosby et al., 2009) and a sample of predominantly White MSW (Crosby et al., 2010) have found that fit problems are associated with condom use errors including applying condoms after penetration has begun and removing them early. Yarber, Crosby et al. (2007) found that participants among a diverse sample of MSW who reported “fit/feel” problems were 2.5 times more likely to report removing condoms too early than those who did not report fit problems.

Additionally, a variety of studies have found significant associations between reported fit problems and reports of condom failure, both breakage and slippage, among samples of individuals of a variety of clinical and non-clinical populations. As mentioned previously, the first empirical condom fit study provided a clinical sample of MSM with condoms and subsequently asked them to rate them by preference and to report condom failure; condoms rated as too small were significantly more likely to break than those that were not (Ross, 1987). Soon after, in response to their patients’ complaints about condom breakage, urologists Tovey and Bonell (1993) assessed the relationship between reported condom tightness and breakage and also found a significant relationship among a diverse clinical sample of British men. Two physicians working in a genitourinary clinic, Higgins and Estcourt (1993) then published a letter in response to echo Tovey and Bonell’s (1993) reports of patients’ problems with condom breakage despite apparently using proper condom application techniques.

Since these anecdotal reports and early studies, multiple studies have shown links between condom fit problems and condom failure. Sparrow and Lavill (1994) found that among the mainly White men and women in their clinical sample, reports of both breakage and slippage were more likely among individuals who reported fit complaints, regardless of whether the user perceived the condom to be too small or too large. Similarly, self-reported fit problems have been found to be associated with condom breakage in a clinical sample of Black MSW (Crosby et al., 2007) and both breakage and slippage among non-clinical samples of Black MSM (Reece et al., 2007), White MSW (Crosby et al., 2010), and a sample of both Black and White MSM (Hernández-Romieu et al., 2014).

In a qualitative study of condom perceptions among young Black MSW who had been recently diagnosed with an STI, almost all participants “reporting discomfort said that condoms from the clinic are too tight. They noted that [a larger and] expensive brand (Magnum) is very comfortable and does not pop” (Crosby et al., 2004, p. 307). It was also a participant in this study who reported that he contracted genital warts because the condom he used did not sufficiently cover his penis. Thus, both anecdotal reports and empirical evidence support the assertion that poor condom fit is associated with increased risk of condom failure, both breakage and slippage, among a wide range of populations. The implications of this body of literature are significant: condom fit problems decrease the efficacy of condoms as a
preventive health intervention both indirectly through the introduction of uncomfortable sensations that disincentivize correct and consistent condom use and directly by increasing the risk of condom failure during use.

**Penile Dimensions & Condom Fit**

Although Tovey and Bonell (1993) did not assess participants’ penile dimensions, they conclude their findings that a substantial number of their patients experienced both condom failure and condom fit problems “suggest that a proportion of men have penises sufficiently large to cause difficulty in putting on condoms, and for those men condoms are likely to come off or split more often” (p. 987). Research has since aimed to understand whether reports of condom fit problems reflect only perceptions of fit or result from actual differences in the degree of pressure a particular condom exerts on one’s penis, as Tovey and Bonell (1993) suggest. Gerofi et al. (1995) assessed a change in the brand of state-distributed condoms in an unnamed African nation in response to complaints from female sex workers that new condoms were too short, too small, and broke too easily. Their clients similarly reported breakage and that the new condoms were too small in size. The researchers ultimately found that some of the breakage problems were likely the result of poor condom use instruction and that condom use demonstrations had used penile models that were not sufficiently large enough to demonstrate what condom application looks like in practice (Gerofi et al., 1995).

Although Gerofi et al. (1995) did not actually measure condom users’ penile dimensions, they argue there is an interaction between condom design characteristics, specifically condom width and thickness, and penile circumference, resulting in differing degrees of pressure on users’ penises. The authors include a graph showing the relationship between penile circumference and condom pressure on the penis with a demarcated area representing condom fit in which the amount of pressure is high enough to hold the condom in place but not tight enough to cause discomfort. This area, however, is dependent on condom design variables, especially condom width, so that the wider the condom, the wider one’s penis must be for that condom to exert an unacceptable amount of pressure on a one’s penis, whereas the narrower one’s penis, the lower the minimum amount of pressure necessary to hold the condom in place. Figure 1 shows a version of the graph by Gerofi et al. (1995), adapted to include a visual representation of the range of penile circumference for which narrower condoms would be acceptable.

Indeed, penile dimensions vary widely. In their commentary on the importance of condom fit to public health, Cecil et al. (2010) cite a study conducted by Wessells et al. (1996) that measured erect penile dimensions of 80 American men and found penile lengths to range from 75 to 190 mm with a mean of 128.9 mm and penile shaft circumference to range from 90 to 160 mm with a mean of 123.0 mm. However, three of the four studies included in this analysis that directly assessed penile dimensions reported even wider ranges of penile lengths and two reported wider ranges for penile circumference.
Table 4 summarizes the variation of penile dimensions across these sources. All four studies used self-measurement kits to measure participants’ penile dimensions and had samples including predominantly White men. Whereas one study of Australian men found a narrower range of lengths (117–225 mm, \( M = 159.9 \) mm; Richters et al., 1995), the other studies all reported a maximum length of 260 mm, with minimum lengths of 40 mm (Reece et al., 2006), 50 mm (Reece et al., 2009), and 90 mm (Smith et al., 1998), respectively. These studies reported mean lengths of 157 mm (Smith et al., 1998) and approximately 141.5 mm (Reece et al., 2006; Reece et al., 2009). Thus, the evidence suggests penile lengths vary significantly across individuals.

Some studies reported circumference measurements at a specific penile location or at multiple locations (i.e. base, shaft, glans). Wessells et al. (1996) had measured participants’ shaft circumference, and the only other source reporting shaft circumference reported almost identical values for ranges and means (Richters et al., 1995). Richters et al. (1995) reported glans circumference (93–160 mm, \( M = 119.3 \) mm), and also assessed basal circumference, reporting it to be the widest of the penile locations they measured, ranging between 105 and 175 mm with a mean circumference of 134.7 mm. Smith et al. (1998) solely asked participants to measure basal circumference, reporting a similar mean circumference of 131.9 mm and a range of 87 to 167 mm. The studies that did not report where on the penis participants were asked to measure circumference reported the widest range of values, with minimum circumferences of 30 to 40 mm and maximum values of 190 mm and means of approximately 122 mm (Reece et al. 2006; Reece et al., 2009). Thus, the available research regarding condom fit suggests that penile circumferences also differ greatly among individuals and that circumference varies at different penile locations.

The significant variation in penile dimensions for both length and circumference provide support for the assertion that users’ complaints of condom fit problems do not solely reflect perceptions but rather are informed by actual physical differences among condom users. Studies that have directly assessed the relationship between penile dimensions and perceptions of condoms and condom use behavior have supported such a theoretical model, such as the one presented by Gerofi et al. (1995) that depicts how both penile and condom dimensions play critical roles in appropriate condom fit and performance. However, most studies have indicated that in addition to penile width, penile length also contributes to condom fit. Richters et al. (1995) found that fit complaints were correlated with self-measured penile dimensions. Notably, 6% of their sample of predominantly White Australian men had penises longer than the available condoms in the country at the time, concluding that a “significant minority” of their sample “had good reason to complain about condoms being too small” (Richters et al., 1995, p. 81). Similarly, the study of penile dimensions among mainly White heterosexual men from all 50 states found that “at clearly identifiable intersections of length and circumference relations between penile dimensions and perceptions of condom fit and feel existed” including the perceptions that condoms are too long, too short, too loose, or
too tight (Reece et al., 2009, p. 127). The authors suggest these findings may “provide some validation to challenges faced by those implementing STI prevention interventions who have encountered men who assert that condoms do not fit or feel comfortable” (Reece et al., 2009, p. 130). Indeed, these findings may also provide validation for condom users who have repeatedly experienced condom fit problems firsthand.

Reece et al. (2009) argue the evidence suggests that some men perceive condoms to fit poorly and feel uncomfortable poses a significant challenge to efforts to increase correct and consistent condom use, limiting their success as a public health intervention. There is additional evidence to suggest that penile dimensions can also limit the degree of protection afforded by condoms even when applied with correct technique and used consistently. One study assessing the associations among perceived penile dimensions, sexual health, and psychosocial factors found penile dimensions were not associated with condom use or diagnoses of the most common STIs, including HIV (Grov et al., 2010). However, penile dimensions were associated with diagnoses of HPV and HSV-2, two viral STIs that are transmitted skin-to-skin, which the authors suggest may indicate penile dimensions influence risk of condom breakage or slippage (Grov et al., 2010). Although this claim is supported by empirical research conducted with participants of various sexual orientations (Grov et al., 2013; Smith et al., 1998), this proposed explanation does not account for the fact that only skin-to-skin STIs were found to be associated with penile dimensions while other STIs were not. Alternatively, those with larger penile dimensions may be at a higher risk for skin-to-skin STIs because some condoms, often those most readily available, do not provide sufficient protection, as indicated by the young man who reported contracting genital warts in the study conducted by Crosby et al. (2004).

It is important to note that Grov et al. (2010) suggest that the lack of association between penile dimensions and condom use and most STIs among their participants may be due to the fact the study was conducted in New York City, the residents of which may have better awareness of and access to appropriately sized condoms than other populations. However, a later study also conducted in New York City found self-reported penile dimensions to be associated with condom use during insertive anal penetration, as well as with attitudes towards condoms, difficulty finding condoms that fit, and reports of condom breakage and tightness (Grov et al., 2013). A similar study conducted in Serbia found that men with larger perceived penile dimensions were more likely to report a history of either chlamydia or gonorrhea (Bjekic et al., 2018). While some of the evidence is inconclusive, the literature suggests that penile dimensions play a critical role in one’s experience of condom fit and may also influence condom use, condom failure, and some sexual health outcomes.

Penile dimensions are intimately connected with racialized cultural myths regarding sexuality that have been largely unsupported by empirical research, such as the beliefs that men with larger penises are better sexual partners, Black men have larger penile dimensions, and Asian men have smaller penile
dimensions (Grov et al., 2015). These cultural myths are nonetheless pervasive. Men with larger
perceived penile dimensions have been found to have greater satisfaction with their penis size (Bjekic et
al., 2018) and gay men with smaller penile dimensions report lower life satisfaction and higher gay-
related stigma (Grov et al., 2010). Only one study assessed intergroup variation in penile dimensions,
finding no age differences (Schneider et al., 2001). However, no sources assessed racial differences in
penile dimensions or attributed racial differences in condom failure and fit problems to them. For
example, although Tovey and Bonell (1993) assume differences in penile dimensions are the cause of
condom fit problems and some condom failures and they note that their Black participants were more
likely to report condom failure and tightness, they do not suggest that this finding is due to the Black men
having larger penile dimensions than the men of other races. Similarly, Hernández-Romieu et al. (2014)
found that Black MSM were more likely to report condom breakage, slippage, and fit problems than
White MSM, but the authors do not attribute these findings to racial differences in penile dimensions.

However, the analyzed set of sources included two overt references to the racialization of
condoms. In their response to Tovey and Bonell (1993), Higgins and Estcourt (1993) report they received
clarification from the British Standards Institute (BSI) regarding condom dimensions that explained there
were two approved sizes at the time: one standard size and one smaller size intended for use by “Far
Eastern consumers” (p. 1424), a statement which the authors neither praise nor criticize. Secondly, a
qualitative study of young South African men’s attitudes towards condoms reported problems not only
with condom size but also with the color of condoms (Patient & Orr, 2000). For condom users with
darker skin, the standard cream color of condoms can “white-wash or dramatically alter the color of the
skin underneath” and is one part of a “white-catered market of sexual goods and objects” (Thepmankorn,
2018). Given that penile dimensions are unlikely to account for racial differences in condom use, condom
failure, or attitudes towards condoms, other design characteristics of condoms in addition to size and
shape, such as color, should be assessed for their ability to explain the racial differences in condom
outcomes found in some studies. It is important to note that when comparing findings across studies
assessing the prevalence of condom fit problems, there do not appear to be any consistent racial
differences in reports of condom failure or fit problems (Table 2).

“The Right Condom”

The young Black MSW in the study conducted by Crosby et al. (2004) reported that their
comfort-related condom problems, including tightness and CAEP, were relieved when using “the right
condom,” raising the question of what makes a condom right for an individual at a particular time during
a particular sexual behavior? (p. 307). Most condom fit research has focused on the determinants and
implications of poor condom fit and has paid little attention to considering what comprises appropriate
condom fit. Some researchers have conducted trials of condoms that are fitted to users’ penile dimensions
CONDOM SIZE MATTERS

(Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019). While it may seem intuitive to define appropriate fit in a material sense as when penile and condom dimensions relate to one another with a set ratio, condom user preferences regarding condom tightness and condom shapes vary (Reece et al., 2007) and condom user’s perception of fit problems appear to be important. For example, two condom users with differing penis dimensions may prefer the same condom dimensions due to such preferences, or two condom users with similar penis dimensions may prefer differently sized condoms from one another. The operationalization of ideal fit used by such research (Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019) does not account for the critical role of subjectivity in correct condom fit.

Other researchers have assessed appropriate fit by asking participants whether condoms fit “just right” (Grov et al., 2013) or provide users with “optimal fit/feel” (Hernández-Romieu et al., 2014), defining appropriate condom fit as the user’s perception of an appropriate fit. Examining data regarding penis dimensions and penile pain locations as well as various interventions that have been aimed at improving condom fit together provide insight into whether it is more significant for public health efforts to improve condom use behavior to focus on condom fit as an objective physical state or a subjective internal experience.

**Condom Shape**

Despite largely refraining from directly defining optimal condom fit, the literature highlights specific design characteristics that influence whether a condom user perceives a condom to fit comfortably or not, including condom shape and material. The estimates of penis dimensions described earlier suggest not only the size of condoms determine condom fit but rather the shape of condoms is significant as well, given the range of reported dimensions at different locations along the penis (Richters et al., 1995). Studies that have asked participants about their degree of comfort when using condoms at specific penis locations also provide useful information regarding the range of condom shapes that should be developed. Across the studies, the most frequently reported penis location at which condom users experience tightness is the base of the penis, although a similar proportion of condom users reported condoms to be too tight on their shaft and glans (Dodge et al., 2010; Reece et al., 2007; Reece et al., 2009; Reece et al., 2010). Such data should be used by condom manufacturers to guide their condom shape designs, for example, by creating a condom with a wider base in response to reports of tightness at the rim of the condom (Sparrow & Lavill, 1994).

Some condom manufacturers have already produced specific shapes that are attentive to penile anatomy, and public health professionals should assist in condom distribution and selection not only according to size but also shape preferences. Reece et al. (2007) found that of their participants experiencing condom fit problems, 70% reported tightness on the glans. The authors suggest that since condom manufacturers have produced condoms with “more bulbous heads” in order to “reduce the
constriction of latex on the glans, given its high density of nerve endings,” sexual health education providers may recommend such condoms to men who report tightness on the glans (Reece et al., 2007, p. 456). The authors also point out, however, that men who reported looseness may prefer other condoms than those; indeed, a small number of men reported condom looseness at similar rates at each penile location, but most frequently the glans (Dodge et al., 2010; Reece et al., 2007; Reece et al., 2009; Reece et al., 2010).

**Interventions**

Two sources describe interventions that used custom-fitted condoms, alternately referred to as sized-to-fit condoms, operationalizing ideal fit by matching condom and penile dimensions in a set ratio, as previously described (Reece et al., 2006; Siegler et al., 2019b). Reece et al. (2006) compared failure rates and acceptability ratings of a standard sized-condom and a custom-fitted condom. Rates of breakage were only significantly different when stratifying by penile dimensions; the fitted condoms broke significantly less among those in the middle circumference group for anal penetration, the larger circumference group for vaginal penetration, and with longer penile lengths for both vaginal and anal intercourse. However, more slippage occurred with the fitted condoms for those in the middle length and middle circumference groups, which the authors suggest may be because these participants “overstated their size in order to accommodate for past perceptions of condom discomfort” (Reece et al., 2006, p. 146). Alternatively, the randomized three-way trial of fitted, thin, and standard condoms being conducted by Siegler, Rosenthal, Sullivan, Mehta et al. (2019) found no difference in failure rates between fitted and standard condoms for anal or vaginal penetration, and a very low failure rate for all condoms for anal intercourse; however, thin condoms were associated with higher failure rates compared to standard condoms.

While neither Reece et al. (2006) nor Siegler, Rosenthal, Sullivan, Mehta et al. (2019) discuss or assess how fitted condoms compare to standard condoms regarding impact on attitudes towards condoms nor the experience of sexual pleasure, Reece et al. (2006) found that fitted condoms were as equally acceptable as standard ones. Custom-fitted condom interventions generally require self-measurement, which is also likely to be acceptable to condom users given that Grov et al. (2013) report that most of their participants had measured their penises before being asked to do so for their study and 14.4% of the Black young MSM surveyed by Reece et al. (2007) reported using custom-fitted condoms. Thus, fitted condoms appear to have similar failure rates as standard condoms and similar acceptability; their impact on the experience of sexual pleasure requires further investigation.

Other condom use interventions have aimed to address condom fit and feel by promoting experimentation with different types of condoms in order to ascertain which are most comfortable. A systematic review of interventions regarding condom fit and feel (Anstee et al., 2019) included two
CONDOM SIZE MATTERS

articles that addressed fit specifically (Emetu et al., 2014; Milhausen et al., 2011). Both assessed the use of the Kinsey Institute Homework Intervention Strategy (KIHIS), a short intervention that involves teaching participants condom application skills, providing them with a kit with a range of condoms and lubricants, and instructing them to practice condom application at home, asking them to experiment with different condoms while paying attention to their sexual arousal and sensations, aiming to assist them in finding their optimal condom fit and feel (Emetu et al., 2014; Milhausen et al., 2011). The evaluation studies found significant post-intervention improvements in attitudes toward condoms and motivation to use them (Emetu et al., 2014) and in the ability to use condoms, rates of erection problems, and experiences of condom fit and feel (Milhausen et al., 2011). Both studies also found improvements in condom use self-efficacy (Emetu et al., 2014; Milhausen et al., 2011). Emetu et al. (2014) reported very good acceptability of the intervention and that some participants were enthusiastic about having the opportunity to try various condoms they would not have used otherwise; instructions to evaluate the fit and feel of condoms by masturbating while wearing a condom seem to be acceptable to condom users.

The results of the systematic review (Anstee et al., 2019) informed the design of a feasibility study for the adaptation of the KIHIS for delivery to young men in the UK, which also found strong acceptance for the intervention and compliance with the intervention protocol (Stone et al., 2018). Participants reported that they had not previously considered testing out different condoms for fit and feel nor to trying out condoms in the absence of a sexual partner (Stone et al., 2018). The authors of all three studies highlight that the KIHIS intervention is brief, self-guided, and home-based and argue it is likely to be cost-effective and easy to implement in both clinic and community settings, even those with minimal resources to dedicate to sexual health education (Emetu et al., 2014; Milhausen et al., 2011; Stone et al., 2018).

Comparing interventions that developed custom-fitted condoms with those that facilitated and encouraged participant experimentation with a variety of condoms already available on the market provides insight into how objective (i.e. material-focused) and subjective (i.e. perception-focused) operationalizations of condom fit differ and which is more significant for public health efforts to promote correct and consistent condom use. While the custom-fitted interventions found similar levels of breakage and acceptability between fitted and standard condoms, neither study assessed the intervention’s impact on attitudes toward condoms nor the experience of sexual pleasure during condom use (Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019). However, the studies using the KIHIS methodology found a variety of improvements in attitudes towards condom use as well as experiences of condom fit and feel and rates of erection problems (Emetu et al., 2014; Milhausen et al., 2011). This suggests that custom-fitted condoms may not be necessary for all condom users and some condom users significantly
benefit from the encouragement and ability to try multiple types of condoms to find out what fits and feels best.

The two evaluation studies of the NYC condom described earlier found that 14% of a sample from groups with elevated STI risk (Burke et al., 2009) and 28% of an STI clinic population (Burke et al., 2011) wanted larger-sized condoms, which the DOHMH subsequently provided based on these results. However, a later evaluation of attitudes toward the NYC condom among MSM found that of those who had not used the product, 13.9% reported size concerns (Grov et al., 2013). Despite the new availability of a larger option, concerns regarding the NYC condom size persist as a barrier to condom use for a minority of condom users. Grov et al. (2013) suggest “expanding the range of sizes and textures available via free condom distribution programs may effectively promote condom use among the minority of individuals who are not satisfied” even after the first expansion of NYC condom options to include larger, thin, and extra-strength condoms (p. 5).

However, in addition to producing and distributing multiple sizes of condoms the ability for condom users to consistently access condoms that fit appropriately, individuals at the extremes of the ranges of penile dimensions may still require access to custom-fitted condoms in order to perceive condoms to feel sufficiently comfortable. A study that analyzed the first 1000 online purchases of a variety of condoms with a range of 95 sizes and compared them to standard dimensions of condoms as required by regulatory agencies found consumer interest in the entirety of the size range provided (Cecil et al., 2013). Sales included 83 unique sizes, including all 14 lengths, 12 widths, and the smallest and the largest sizes. Such research indicates interest in an expanded range of condoms compared to current guidelines, given that only 13.4% of the sales were of condoms within the standards set by the American Society for Testing and Materials (ASTM; Cecil et al., 2013). Future research should investigate how custom-fitted condoms or condoms that very closely correspond with the users’ penile dimensions differ from matching condom users with a general size range (i.e. smaller, medium, larger) with regard to condom failure, behavioral, and attitudinal outcomes.

**Condom-seeking Behavior**

Penile dimensions and condom fit problems have both been found to be associated with difficulty finding or accessing condoms that are perceived to fit (Grov et al., 2013; Reece et al., 2007). Experiencing problems with finding condoms that fit were common; only 38.4% of a racially diverse sample of MSM reported that finding condoms that fit was easy (Grov et al., 2013). In one study, 12.6% of condom users reported seeking sized condoms (Reece et al., 2010) and another found that approximately one-third of participants were using condoms designed for larger penises and 2.3% were using condoms for smaller penises (Reece et al., 2007). It is important to remember that simply producing custom-fitted or multiple sizes and shapes of condoms is not sufficient to facilitate their use; the participants in the study by Crosby
et al. (2004) who described Magnums to be more comfortable and to break less than the free condoms offered to them but noted they are expensive, more so than standard-sized commercially available condoms. Difficulty finding condoms may sometimes reveal a need for custom-fitted condoms, but it can also reflect difficulty accessing condoms that are already mass-produced due to distribution and/or cost-related issues, highlighting the importance of distributing a variety of condom sizes as low-cost or free products to the public, especially among high-risk groups.

**Conclusion**

This analysis suggests that a significant minority of men, across age groups, sexual orientations, and racial groups, experience condom fit problems that are associated with important psychosocial and biological outcomes regarding sexual health. While the most common problem is the perception that condoms are too tight, the literature indicates a wide variety of condom fit problems have been reported by condom users (Dodge et al., 2010; Reece et al. 2007; Reece, et al., 2009; Reece et al., 2010). Such fit problems are associated with penile dimensions, which vary widely among individuals (Richters et al. 1995; Reece et al., 2009). There is evidence to suggest that condom fit meaningfully contributes to the experience of sexual pleasure and rates of CAEP during condom-protected penetration (Crosby et al., 2010; Graham, 2016; Graham et al., 2006) as well as condom use errors and failure including breakage or slippage (Crosby et al., 2007; Crosby et al., 2010; Hernández-Romieu et al., 2014; Reece et al., 2007; Sparrow & Lavill, 1994). Thus, condom fit problems decrease the efficacy of condoms as a preventive health intervention both indirectly through the introduction of uncomfortable sensations that disincentivize correct and consistent condom use and directly by increasing the risk of condom failure during use, which negatively impacts future use as condom failure reduces perceptions of condom reliability and acceptability (Grady et al., 1993; Tovey & Bonell, 1993).

The significant variation in penile dimensions for both length and circumference provides support for the assertion that users’ complaints of condom fit problems do not solely reflect perceptions but rather are informed by actual physical differences among condom users. While custom-fitted condom interventions have found similar levels of breakage and acceptability between fitted and standard condoms (Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019), further research is needed to understand how fitted condoms compare with standard ones with regard to attitudes toward condoms and experience of sexual pleasure during condom use. Interventions that have aimed to address condom fit and feel by promoting experimentation with different types of condoms in order to ascertain which are most comfortable have also demonstrated a variety of improvements in attitudes towards condom use as well as experiences of condom fit and feel and rates of erection problems (Emetu et al., 2014; Milhausen et al., 2011; Stone et al., 2018). The evidence suggests that whereas some condom users significantly benefit from the encouragement and ability to try multiple types of condoms to find out what fits and feels best,
custom-fitted condoms may be necessary in order for some individuals to feel sufficiently comfortable during condom use (Grov et al., 2010; Reece et al., 2006). Finally, the analysis highlighted that while condom manufacturers produce a range of sizes and shapes, some individuals lack access to specialty sized or shaped condoms, especially since they are often not provided in places where condoms are supplied for free, such as schools and clinics, and are often priced higher than standard condoms (Crosby et al., 2004; Crosby et al., 2005).

This synthesis of evidence suggests a theoretical model that defines appropriate condom fit and contextualizes condom fit within other known predictors of condom use behavior. The first part of this theoretical model is summarized by the graph adapted from Gerofí et al. (1995) indicating that the degree of condom pressure on the penis is dependent on both penile circumference and characteristics of the condom, specifically width and elasticity (Figure 1). The pressure the condom exerts on the penis must be enough to hold it in place but not so much that the user perceives the condom to be uncomfortably tight. Based on these minimum and maximum cutoff points, the graph shows that condoms that are wider or more elastic than standard condoms are more likely to be appropriate for condom users with wider penile dimensions, whereas narrower condoms would be acceptable for narrower penises.

The physical characteristics of condoms and penises, specifically their dimensions, interact to produce condom acceptability, which is defined by the graph as a condom that is tight enough to stay on but not too tight so that it causes discomfort (Figure 1). Whereas the original graph does not address penile length, the adapted version includes both penile circumference and length since penile length likely interacts with both condom length and condom wideness because longer penises stretch condoms more, influencing condom fit (Richters et al., 1995). Neither the adapted graph nor the original includes a representation of condom breakage; it was omitted in this thesis due to the assumption that such a point would be beyond the maximum degree of tightness acceptable to the user. This framework thus theorizes appropriate condom fit to comprise the degree to which penile and condom dimensions correspond with one another, the risk of condom failure, and the perception of a comfortable fit.

The second part of the theoretical model is based on the Condom Use Experience (CUE) model, which emphasizes aspects of the experience of using condoms as being key predictors of behavior and shows their relation to other known predictors of condom use behavior (Sanders et al., 2012). Figure 2 depicts a version of the CUE, adapted to include additional components that the analysis of the condom fit literature identified as important for attitudes, behaviors, or health outcomes. According to the model, contextual factors (the left panel), including attitudes, self-efficacy, relationship quality, information, and product availability, inform the probability of using a condom for a specific sexual event and to a lesser extent influence future condom use behavior (Figure 2; Sanders et al., 2012). The authors theorize that the experience of condom use mediates the relationship between contextual factors and future condom use (the
right panel), including rates of and consistency of condom use and product selection, which then in turn influence the contextual factors in a cyclical way (Figure 2; Sanders et al., 2012). For example, experiencing CAEP may decrease a condom user’s condom use self-efficacy and reduce the likelihood of future use (Anstee et al., 2019), or experiencing a breakage with a particular product or brand may deter condom users from repurchasing either that brand or condoms altogether due to concerns regarding reliability.

The CUE model theorizes the condom use experience (center panel) to comprise of four related parts: condom use errors (presence or absence and type) interact with the perception of condom fit and feel (either positive or negative) and together directly influence aspects of the sexual experience and the degree of protection the condom provides (Figure 2; Sanders et al., 2012). Sanders et al. (2012) consider degree of condom protection to comprise condom failure (breakage or slippage, yes or no) and incomplete use (applying the condom late or removing it early, yes or no). The adapted model also includes whether the condom sufficiently covers the penis as a component of condom protection in light of some condom users reports that condoms do not provide sufficient coverage of the penis (Figure 2; Crosby et al., 2004; Dodge et al., 2010; Reece, et al. 2007; Reece et al., 2009; Reece et al., 2010). According to the CUE model, the relationship between condom fit and errors and degree of condom protection is also mediated by aspects of the sexual experience, including the duration and intensity of intercourse and the user’s arousal, sensations, and experiences with erection and orgasm (Sanders et al., 2012). Pleasure was added to the adapted model as an aspect of the sexual experience based on evidence that links condom fit to pleasure and to condom use behavior (Figure 2; Crosby et al., 2004; Crosby et al., 2010; Crosby et al., 2013; Graham, 2012). The adapted model also emphasizes product availability and information (especially about that product availability) as direct predictors of condom fit and feel (Figure 2).

The CIS analysis contributed to a proposed comprehensive theoretical framework regarding the role of condom fit in condom use behavior, represented by Figures 1 and 2. The framework proposes that appropriate condom fit comprises an amount of pressure that is enough to prevent slippage but not so much that the user perceives the condom to be uncomfortably tight or that it breaks. Problems with fit may result from a lack of knowledge about product availability or a lack of availability of appropriately sized products, either because they are not manufactured or because they are inaccessible (e.g. expensive, difficult to find, etc.). The framework represents the processes by which condom fit contributes to the degree of protection provided by a condom as well as attitudes towards and patterns of future condom use, thus influencing the uptake of condoms as a preventive health behavior.
Section III: Condom Size Range and Information Availability

Size Information on Websites

The analysis of Google search results regarding condom fit involved reviewing the content of a set of relevant webpages (N = 62), compiling the measurements of products listed, and comparing across sources. The reported dimensions were analyzed both with regard to the quality of the information provided (i.e. clarity, comprehensiveness, consistency across sources) and with regard to the range of available condom sizes. The set of condoms analyzed included 141 unique products; 47 of those condoms had measurements listed in two or more places that differed to a meaningful degree.

As Medical News Today notes, condom brands do not always make product dimensions readily available to consumers, and product measurements vary across sources (Eske, 2020). For example, while the website of Durex, one of the top condom brands in the United States, acknowledges the importance of condom fit on their website, they only provide measurements for some of their products, and generally only the condom width (Durex USA, 2020). Table 5 summarizes the availability of condom dimension information on the websites of the condom brands included in the condom dimension analysis. Out of the 28 brands included in the condom dimensions analysis (not including sub-brands), eight did not have a brand website, two have been discontinued, and one no longer lists any condoms on their website. While nine of the 17 brands or sub-brands with websites listed at minimum the width and length of all their products, three only listed product widths, and only one sized-to-fit sub-brand listed the range of sizes of their products. Thus, four brands (Kimono, Lifestyles, Trojan, and Okamoto) and their sub-brands (i.e. Magnum) listed no dimensions of any of their products on their respective websites.

The brands that listed dimensions on their website rarely included any further information about condom fit. Only one non-custom-fitted brand, Glyde (2020a), included a webpage dedicated to information about the topic, including how to measure penile dimensions, stressing the importance of a proper condom fit for maximizing comfort and protection. One condom vendor noted that condom dimensions are also generally not printed on the packaging of American condoms (Condom Jungle, 2020a). Alternatively, condom vendor websites included much more information about product sizing, how to measure one’s penis, and how to select the correct size than did condom brands and included additional condom dimensions on charts, such as condom circumference (i.e. Condom Jungle, 2020a; Haney, 2019). They also more frequently included information about the importance of condom fit for sexual health and pleasure (i.e. Condom Depot Learning Center, 2019; Lucky Bloke, 2020). Some vendor websites also included content or features aiming to directly assist consumers with condom selection, including “size calculators” intended to recommend appropriately sized condoms (i.e. Condom, 2014; Eden's Delight, n.d.; Lucky Bloke, 2020; Condom Jungle, 2020b).
Public health organizations included similar content to those of vendors, although they more frequently emphasized the connections among poor condom fit, condom failure, and health outcomes (i.e. STIs, unintended pregnancy) (i.e. Family Planning Association, 2015). Some organizations, such as Planned Parenthood also described how to know if a condom is correctly sized (Kendall, 2011) or recommended experimenting with multiple brands or shapes of condoms to find ones that feel best (American Sexual Health Association, 2020). Health information websites also stressed the importance of condom fit for health outcomes (Go Ask Alice!, 2017; Scaccia, 2018) and provided medically reviewed information about how to measure one’s erect penile dimensions (Scaccia, 2018; Stacey, 2020b). Some also included size charts of condoms across brands (Scaccia, 2018). Websites and blogs created specifically to provide information about condoms also included size charts and examined the relationship between condom width measurements and penile girth; Lara, 2013a). One webpage lists condom recommendations separated by each of the various size complaints (Lara, 2013b).

Popular press and magazine websites included some sources with differently gendered audiences, some intended for men (e.g. Esquire), some for women (e.g. Cosmopolitan), and some audiences were gender-neutral (i.e. The Greatist). However, content regarding condom fit was similar across sources, regardless of the gender of the intended audience. For example, some articles recommended that condom-wearers (i.e. “men”) buy variety packs of condoms if they are unsure of their size and because it provides them the opportunity to experiment with multiple to discover which products feel best (Walansky, 2018) and others recommended that those who use condoms but do not wear them (generally assumed to be women) keep a variety pack of condoms on hand in order to be better prepared (Corinna, 2011; Wong, 2017). Most popular press sources quoted sexual health experts (e.g. Walansky, 2018; Cecil, 2020) or collaborated with sexual health organizations (e.g. Re.Wire News and Scarleteen; Corinna, 2011).

Penile measurement recommendations in popular press sources included both the techniques included in health information websites (Walansky, 2018) as well as a quicker but less precise method: using a toilet paper roll to assess penile girth and whether one’s penis requires snugger, standard, or large fit condoms (Cecil, 2020). The latter method was also promoted on some sexual wellness company websites as a less technical but equivalently suitable way of determining condom size (Astroglide Team, 2016; Lucky Bloke, 2020). While less information on condom fit was available directly from the condom brands themselves, Google search results demonstrate that other sexual wellness companies (including condom vendors), public health organizations and health information websites, and popular press interviews with experts provide condom users with useful guidance regarding condom fit. The findings of this analysis have been compiled into a brief, gender-neutral guide intended to be adapted to assist condom users in finding appropriately fitting condoms (Appendix).
Overview of Condom Measurements

When condom dimensions are marked on the packaging or provided on websites, the most commonly provided dimension is *nominal width*, which is a condom industry term for the diameter of a condom near the open end when it is laid flat (TheyFit, 2020a). TheyFit (2020a) refers to nominal width as the “single most significant aspect when choosing the correct condom size for your requirements,” calling it a “shame” that “formal sex education” generally leaves condom users unequipped with an understanding of nominal width. Additional sources also argued the width of the condom is much more important than the length for a correct condom fit (Astroglide Team, 2016; Ian, 2013). Because some condoms vary in shape, a number of sources specified which “width” they refer (i.e. the width of the base, mid-shaft, or head of the condom) and/or included multiple measurements per condom (Lara, 2013b; Stacey, 2020a). Some condom vendors also reported condom circumference (Haney, 2019; Condom Depot Learning Center, 2019).

While some websites agreed that determining the correct condom circumference was both important for condom users and required knowing one’s penile girth, there were conflicting opinions on how to calculate that measurement using nominal width. The health information website Healthline argues “you can figure out the [flat] width of your penis the same way you’d determine the diameter of a circle” (Scaccia, 2018), suggesting that condom users divide their penile girth by \( \pi \) (3.14), a divisor also recommended by two additional sources (Glyde, 2020a; Troisi, 2018). The recommendation of using a divisor of 3.14 equates to a recommendation that condom users match the circumference of their condoms to their penile girth with a ratio of 1:1. However, an interview with blogger “Alex” (2014) conducted by Condom Monologues (Lara, 2013a) explains that the material of condoms is intended to stretch between 10 to 20% when they are worn and thus recommends that condom width be smaller than penile circumference, advocating for a divisor of 2.25. Similarly, TheyFit uses a 2.37 dividing factor to determine the correct condom circumference for their customers (Theyfit, 2020d). TheyFit also provided the fitted condoms for both empirical studies evaluating the outcomes of fitted condoms (Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019). However, TheyFit is now run under the MyONE brand; MyONE has not published information regarding how they use their customers’ penile dimensions to fit them with condoms.

Measurement Discrepancies Across Sources

As previously mentioned, 47 of the condoms listed in the set of analyzed search results had at least one dimension listed on two or more webpages that differed to a meaningful degree. Based on their own research, TheyFit claim men are able to distinguish among very small differences in condom widths, specifically 2 mm (TheyFit, 2020a). Thus, a meaningful difference in reported widths was defined as 2 mm. There was no comparable evidence upon which to base the distinctions among condom lengths and
thus 4 mm was chosen based on the common argument that differences in lengths are somewhat less important for correct condom fit (Astroglide Team, 2016; Haney, 2019; Ian, 2013). Two sources similarly found that condom vendors frequently had “conflicting measurements for the same condom” (Lara, 2012) and thus measured condoms themselves (Haney, 2019). Some products may have been redesigned over time, contributing to the variation in reported dimensions, and that condom dimensions inevitably vary slightly across individual products to some extent. However, meaningful differences in reported dimensions across products make it more difficult for condom users to select appropriately sized products.

Figures 3 and 4 categorize the 47 condoms with differing reported measurements by their range of reported values for both width and length, respectively. Reported widths for the same product across different sources differed from 2 to 3.99 mm for 16 condoms, 11 condoms’ reported widths differed from 4 to 7.99 mm, and 3 condoms had reported widths that differed by more than 8 mm. The range of reported lengths for the same products varied even more widely; 14 condoms had reported lengths differing by 4 to 9.99 mm, 23 condoms by 10 to 19.99 mm, and seven by 20 to 29.99 mm. ONE’s Legend condom had the greatest discrepancy in reported length, ranging from 200 mm on one webpage (Lara, 2013b) to 238 mm on another (Haney, 2019). On their website, ONE reports the average length of the Legend condom to be 226 mm (ONE, n.d.); Medical News Today was the only source of three to report the same length (Eske, 2020). There was one case in which a brand’s website reported discrepant dimensions for their own products on different webpages; two of Glyde’s condoms’ reported lengths differed by 10 to 15 mm between the two sets of reported dimensions (Glyde, 2020a, 2020b). More than one-third of the products listed in the analyzed search results had meaningfully discrepant measurements across online sources and in some cases these discrepancies were large, limiting condom users’ ability to identify appropriately sized condoms.

**Current Condom Size Range Availability**

Since the products included in the condom dimension analysis were drawn from search results regarding condom fit, they are not representative of all condoms on the market overall but rather indicate the general size range availability of condoms, with an emphasis on the ends of the various size spectrums. Condom Monologues claims that the average condom length in the United States is 190.5 mm (Ian, 2013). Indeed, for the 141 unique products, the most frequently reported condom length across all reported lengths in the condom dimension analysis ($N = 222$) was 190 mm. Across all reported lengths, values ranged from 120 to 240 mm ($M = 194.71$, $SD = 14.86$, $Mdn = 194.0$). The most frequently reported width was 53 mm, and across all reported widths ($N = 229$), values ranged from 34 to 69 mm ($M = 52.65$, $SD = 4.01$, $Mdn = 53.0$). For both dimensions, the values for mean and median widths are similar, indicating that both the reported widths and lengths are distributed approximately normally.
Comparing these ranges of dimensions with the evidence regarding penile dimensions from condom fit research (Table 4) suggests the available size range of condoms should be further expanded. Three studies have shown the upper range of condom lengths to be 260 mm (Reece et al., 2006, Reece et al., 2009; Smith et al., 1998), which is 20 mm longer than the longest available condom in the analysis. Additionally, the upper range of penile circumference was found by some studies to be from 167 to 190 mm (Reece et al., 2006, Reece et al., 2009; Richters et al., 1995). Those girths are wider than what the currently available condoms can comfortably and safely accommodate when they are evaluated using the 2.25 division factor recommended by Condom Monologues, which would prescribe nominal widths ranging from 70 to 76 mm for that penile circumference range (Lara, 2013a).

Categorizing Condoms

Condom brands, vendors, and health information websites generally categorized condoms into three categories of condom fit: snug, standard, and large. Condoms were sometimes categorized both by dimensions of the condoms themselves and sometimes by the penile dimensions they fit, or both. There were discrepancies across sources with regard to these various categorizations. For example, while three sources claimed snugger fit condoms have a nominal width of less than approximately 44 mm and standard condoms’ width to go up to approximately 51 mm (Glyde, 2020a; Hanna, 2020; Stacey, 2020b), two others considered snugger fit to include widths up to approximately 51 mm and standard condoms to be as wide as 54 mm (Hartshorne, 2019; Condom, 2014). Most sources provided overlapping length categorizations with both snugger fit and standard fit including condoms up to 198 mm long, but the standard category also starting at 184 mm and ending at 198 mm (Glyde, 2020a; Hanna, 2020; Stacey, 2020b).

When sources categorized condoms by penile circumference, they agreed that snugger fit condoms are best for those with penile girths less 119 mm and those with a circumference of 130 mm or above should choose larger condoms (Astroglide Team, 2016; Condom, 2014; Eske, 2020; Pete, 2019). One source categorized condom size by penile length, claiming snugger fit condoms fit those with penile lengths below 119 mm and those with penile lengths of 160 mm or longer should opt for large condoms (Vitushka, 2019). Some webpages noted that condoms marketed to be larger, including Trojan Magnums, are often more expensive than standard-sized condoms despite the fact that some are only slightly larger than standard condoms (Poundstone, 2010) or even are standard-sized or smaller (Haney, 2019). Haney (2019) refers to this phenomenon as the “Large Size Condom Myth” and warns condom users against using marketing terms such as “Mega” to select condoms rather than actual dimensions.

International Standards Regarding Condom Dimensions

WebMD notes that since condoms are classified as a medical device, “they have to meet standards regulated by groups like the International Organization for Standardization (ISO) and the American Society for Testing and Materials (ASTM)” and in the United States condoms should be FDA approved
After launching the size-to-fit brand TheyFit in the United States from 2003-2006, founder Frank Sadlo withdrew the product to upgrade the size range and number of sizes available from 55 to 95 (Associated Press, 2007). Sadlo subsequently campaigned to change the international regulations regarding condom sizes rather than seeking to win approval for his products in each country separately (Associated Press, 2007). TheyFit was introduced in 95 sizes in Europe in 2011, and ISO revised recommendations were published in 2015 (ISO 4074:2015), regulatory barriers from ASTM International and the FDA prevented the product from being released in the United States until 2017 when it was released as MyONE Perfect Fit with 60 sizes and a similar size range (Belluck, 2017). TheyFit is now branded as MyONE globally and the TheyFit website will be phased out in 2020; the random codes assigned to each size are consistent across the two brands (TheyFit, 2020b). Walmart started carrying MyONE condoms in 2019 (Chain Drug Review, 2019).

**Custom-Fitted Condoms**

Some press discussed the innovation of custom-fitted condoms with skepticism and in particular interrogated whether such products are necessary in light of the wide variety of condoms already available on the market (e.g. MacMillan, 2017). Melissa White, the CEO of Lucky Bloke, an online condom vendor that emphasizes the importance of appropriate condom fit, has expressed concerns that “having to measure one’s penis could be a complicated and stressful process for size-anxious men” claiming that the “fit suggestions” Lucky Bloke offers are a suitable replacement for “exact measurements” (Kim, 2018). However, other sources, including an interview with a urologist (MacMillan, 2017), suggested that if men perceived custom-fitted condoms to be more comfortable or felt more confident when wearing them, it could encourage increased rates of condom use (Belluck, 2017). Notably, MyONE claims that the highest percentage of sales for any single size is approximately 4.8 percent, indicating consumer interest across the entire range of available sizes (Kim, 2018).

The evidence from both the condom fit literature and internet search results regarding condom fit suggests that there are benefits to providing a wide range of sizes and a sufficient number of distinct sizes within that range given that penile dimensions vary widely and that condom users appear to be able to discriminate among small differences in condom width (TheyFit, 2020a). However, there was also ample evidence in both sets of analyses that encouraging access to and experimentation with a variety of mass-marketed condoms and/or measuring one’s penis to determine which of those products is likely to be appropriately sized may be a sufficiently adequate and more scalable public health intervention than sized-to-fit models, although such brands are a warranted addition to the market given their many benefits (Belluck, 2017; Kim, 2018; MacMillan, 2017).
Section IV: Implications and Recommendations

Condom Industry Recommendations

National & International Regulators

When the British Standards Institute mandated a nominal width of 52 mm for condoms, Tovey and Bonell (1993) called for an expanded range of size based on the evidence that a substantial minority of their patients experienced discomfort and breakage associated with condom tightness. Two decades later, Cecil et al. (2010) argued that the “barrier to introduction of the needed variety of sizes rests with regulatory issues” and Cecil et al. (2014) found consumer interest across a wide range of sizes outside the ASTM’s allowable range. Since then, ASTM International and ISO have revised its range of acceptable lengths to be from 125 to 210 mm (ISO 4074:2015), which is shorter than the upper limit of the range of penile lengths found by most condom fit studies (Reece et al., 2006, Reece et al., 2009; Richters et al., 1995; Smith et al., 1998) and prescribes widths to be from 45 to 60 mm, which is also insufficiently inclusive, as previously demonstrated. That international standards organizations have expanded their size ranges is a significant improvement; however, there is strong evidence that there remains a small number of condom users who would benefit from a still further expanded range.

Condom Brands, Vendors, & Marketers

In addition to manufacturing a wide range of condom sizes and a sufficient number of distinct sizes, condom brands should mark their dimensions more clearly on the packaging to aid condom users in selecting appropriately sized condoms (Condom Jungle, 2020a; Richters et al., 1995). Including dimensions on packaging rather than requiring condom users to navigate vague and inconsistent labels and size categorizations would improve their ability to find comfortable products. Is also critical to “ensure that men are comfortable with the manner in which condoms with varying dimensions are labelled and accessed,” likely with “increased sensitivity to men who might be uncomfortable with seeking, purchasing and using condoms with smaller dimensions” (Reece et al., 2007). MyONE, and formerly TheyFit, use a system in which customers’ penile dimensions are converted into random size codes (e.g. “D21”) which may be another feasible way of steering condom users’ attention even further away from their “insecurities” (Goldsmith, 1987, p. 2262). Condom vendors and marketers should follow similar guidelines regarding size information availability, for example by including product dimensions on the websites of both brands and vendors, and by branding, naming, classifying, and advertising condoms in ways that are sufficiently sensitive to condom users’ anxieties regarding penile dimensions.

Public Health Recommendations

Sexual Health and Education Providers

Researchers at Indiana University recommend sexual health and education providers discuss their patients’ problems regarding condom fit to ascertain their “exact concerns that they have with condoms
related to length, width and tightness or looseness” (Indiana University, 2007), suggesting practitioners may find their Condom Fit and Feel Scale helpful in “understanding men’s perceptions of condom comfort and helping them to select from those available in the marketplace” (Reece et al., 2006, p. 147). In order to actively assist condom users in finding properly fitting condoms, which a number of researchers recommend (i.e. Sanders et al., 2014), providers should become more familiar with the range of products on the market (Grov et al., 2013) and consider recommending specific condoms to clients (Reece et al., 2010). Clinicians and educators should work to increase awareness of the variety of sizes on the market and the importance of proper condom fit for both safer and more pleasurable penetration and ensure their clients know how to access appropriately sized condoms (Crosby et al., 2005), including sized-to-fit condoms if they are indicated (Grov et al., 2010). They may also wish to advise condom users to measure their own penile dimensions and to try a variety of condom sizes, shapes, and materials in order to help them find better fitting and more pleasurable condoms (Higgins & Yang, 2014; Sanders et al., 2014). Clinicians can also provide a variety of differently sized products directly to their patients (Crosby et al., 2007; Yarber et al., 2007).

**Condom Distribution**

Public health programs should assist condom users in obtaining appropriately sized condoms. Burke et al. (2009) advocate for the consideration of community members’ perceived needs when designing a distribution program for condoms, given that meeting those perceived needs may increase rates of condom use. Thus, a condom needs assessment should be conducted before implementing new programs or applying existing interventions to new populations. Although Reece et al. (2006) note that there will be barriers to integrating multiple sizes, public health programs supplying free condoms must consider the variety of condom sizes needed in the communities they serve. Additionally, institutions where condoms are passively provided, such as bowls in clinics, public sex venues, and campus health centers, should include a range of sizes to increase the ability of community members to select appropriately sized products (Crosby et al., 2005).

**Partnership Between Industry and Public Health**

The condom industry and public health organizations, practitioners, and researchers should embark on increased levels of cross-sector work, such as the use of TheyFit condoms for formal evaluations of fitted condoms (Reece et al., 2006; Siegler, Rosenthal, Sullivan, Mehta et al., 2019) or the use of the Condom Fit and Feel Scale by condom manufacturers to develop better fitting condoms (Indiana University, 2007). Collaborative work between public health and the condom industry would improve the degree to which condoms are developed consistently with condom users’ actual experiences with condom fit and public health professionals can play a valuable role in ensuring that differently sized condoms are appropriately labeled and marketed and in making them sufficiently accessible (Reece et al., 2007). For
example, Reece et al. (2010) suggest devising “innovative ways to facilitate men’s (and their sexual partners) ability to acquire condoms in the retail environment” in order to increase the likelihood condom users are able to find appropriately sized condoms. These are only some of the possible avenues for partnerships between those working to increase rates of condom use to improve sexual health outcomes and those in the condom industry working to develop improved products for their customers.

**Conclusion**

The evidence that condom fit warrants greater attention in sexual health promotion efforts is strong: the perception of poor condom fit is associated with reduced acceptability and pleasure ratings, lowered rates of correct and consistent condom use, and increased risk of condom failure. However, one of the primary goals of CIS is to go beyond summarization and to consider the theoretical implications of the literature. The analysis of the condom fit literature contributed to a proposed, more comprehensive framework regarding the role of condom fit in condom use behavior, incorporating additional variables and pathways previously left out of the models published in the existing literature (Anstee et al., 2019; Gerofi et al., 1995; Sanders et al., 2012), including the roles of penile length and sexual pleasure and the potential risk of skin being left exposed to STIs if a condom is too short. Evaluations of interventions seeking to improve condom fit suggest that while some condom users significantly benefit from custom-fitted condoms due to an insufficiently diverse market, most condom users appear to be able to find sufficiently comfortable condoms when their experimentation across multiple brands, sizes, shapes, and materials is encouraged and facilitated.

The web search analysis revealed that accessing information regarding the dimensions of specific products can be difficult, as brands provide widely varying amounts of detail, and some products have multiple, highly discrepant reported measurements across webpages. Additionally, despite the massive increase in the range of available condom sizes since the 1980s, the size range currently permitted by international regulators appears to be still insufficient to fully accommodate all possible penile dimensions. Thus, the condom industry and its regulators should seek to further increase the range of available sizes and to make information about product dimensions available to consumers. Those working in sexual health promotion should make efforts to assist condom users in selecting and accessing appropriately sized condoms by distributing multiple sizes and by raising awareness of the importance of proper condom fit for safer and more pleasurable penetrative sex. There are also many possible avenues for collaborative work between public health professionals and the condom industry in order to develop more comfortable condoms, market differently sized condoms in a sufficiently sensitive manner, and to ensure the diverse array of products on the market is sufficiently accessible to those who need them.

By integrating the literature review and the web search result analysis, CIS was utilized to analyze and combine a heterogenous set of sources into an original theoretical argument and to make practical
recommendations for the condom industry and for those working in the field of sexual health promotion. Future empirical work should aim to investigate whether custom-fitted condom interventions have different effects on attitudinal and behavioral outcomes than interventions intended to improve condom fit by facilitating experimentation with existing products. Such research would provide valuable information regarding whether fitted condoms would be a useful intervention at the population level or whether they are best recommended only for a small number of individuals, especially since resource-intensiveness limits the scalability of custom-fitted condom interventions. The findings of this thesis indicate that researchers should examine the impacts of additional condom design variables, such as material, thickness, and lubricant, on the perception of condom comfort and also demonstrate the importance of paying sufficient attention to material differences among products utilized in public health interventions more broadly.
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CONDOM SIZE MATTERS

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https://doi.org/10.1177/1557988307301276

### Table 1

**Database Search Strategy**

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<th>Database</th>
<th>Search</th>
<th>Results</th>
<th>Unique results included</th>
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<tbody>
<tr>
<td>PubMed</td>
<td>((siz*[Title/Abstract]) OR fit[Title/Abstract]) AND condom*[Title/Abstract]</td>
<td>901</td>
<td>38</td>
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<tr>
<td>EMBASE</td>
<td>(siz*:ti,ab,kw OR fit:ti,ab,kw) AND (condom:ti,ab,kw)</td>
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<td>5</td>
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<tr>
<td>Scopus</td>
<td>(TITLE-ABS-KEY(fit*) OR TITLE-ABS-KEY(siz*) AND TITLE-ABS-KEY(condom*)) AND NOT INDEX(medline)</td>
<td>406</td>
<td>4</td>
</tr>
<tr>
<td>PsychInfo</td>
<td>((TI fit OR AB fit OR KW fit) OR TI siz* (OR AB siz* OR KW siz*)) AND (TI condom* OR AB condom* OR KW condom*)</td>
<td>346</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note. Reference chaining was used to identify 7 additional relevant articles. The total number of analyzed database sources was 54.*
Table 2  
*Web Search Strategy*

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<th>Search engine</th>
<th>Search</th>
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<td>Google</td>
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<td>Google</td>
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<td>Google</td>
<td>“condom fit”</td>
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<tr>
<td>Google</td>
<td>“condom size”</td>
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*Note.* Reference chaining was used to identify 4 additional webpages. The total number of analyzed web search results was 62.
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<th>% too tight Glans</th>
<th>% too tight Shaft</th>
<th>% too tight Base</th>
<th>% too short</th>
<th>% won't fully cover</th>
<th>% too long</th>
<th>% unrolled at base</th>
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<td>Men; clinical</td>
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<td>18.5</td>
<td>13.3</td>
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<td>White 188</td>
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<td></td>
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<td>Potter &amp; de Villemeur, 2003</td>
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<td>Latex</td>
<td></td>
<td>27.2</td>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Polyurethane</td>
<td></td>
<td>36.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crosby et al., 2005</td>
<td>USA (South)</td>
<td>18-25</td>
<td>Men, primarily white</td>
<td>33.0</td>
<td>36.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reese et al., 2007</td>
<td>USA (South)</td>
<td>$M = 33.9$</td>
<td>MSM, Black</td>
<td>178.0</td>
<td>39.3</td>
<td>20.8</td>
<td>15.2</td>
<td>14.6</td>
<td>23.0</td>
<td>9.0</td>
<td>10.1</td>
<td>10.7</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>18.0</td>
<td>18</td>
<td>6.7</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crosby et al., 2007; Crosby et al., 2008; Graham et al., 2006</td>
<td>USA (Midwest)</td>
<td>18-35, $M = 23.7$</td>
<td>MSM clinic attendees, majority Black</td>
<td>278.0</td>
<td>30.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Table 3 (continued).

<table>
<thead>
<tr>
<th>Sources</th>
<th>Location</th>
<th>Age Group</th>
<th>Population</th>
<th>N</th>
<th>% fit problem</th>
<th>% too tight</th>
<th>% too loose</th>
<th>% too short</th>
<th>% won't fully cover</th>
<th>% too long</th>
<th>% unrolled at base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crosby et al., 2009</td>
<td>USA (South)</td>
<td>18-29, M = 23.6</td>
<td>MSM clinic attendees recently diagnosed w/ STI, Black</td>
<td>271</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reece et al., 2009</td>
<td>USA (All 50)</td>
<td>18-70, M = 30.0</td>
<td>Men, primarily MSW and white</td>
<td>789</td>
<td>50.2</td>
<td>32.3</td>
<td>22.8</td>
<td>27.3</td>
<td>28.4</td>
<td>10.0</td>
<td>11.4</td>
</tr>
<tr>
<td>Dodge et al., 2010</td>
<td>Europe (5 countries)</td>
<td>18-88, M = 33.8</td>
<td>Men, primarily MSW</td>
<td>2,350</td>
<td>48.0</td>
<td>36.2</td>
<td>23.3</td>
<td>29.5</td>
<td>29.5</td>
<td>8.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Reece et al., 2010</td>
<td>USA (Midwest, Southeast)</td>
<td></td>
<td>MLWH, primarily MSM and Black</td>
<td>215</td>
<td>36.9</td>
<td>20.6</td>
<td>15</td>
<td>19.5</td>
<td>21</td>
<td>9.3</td>
<td>9.9</td>
</tr>
<tr>
<td>Crosby et al., 2010</td>
<td>USA (some international)</td>
<td>18-67, M = 29.6</td>
<td>MSW, primarily white</td>
<td>436</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crosby et al., 2013</td>
<td>Canada</td>
<td>18-69, M = 35.9</td>
<td>MSW, primarily white</td>
<td>949</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hernández-Romieu et al., 2014</td>
<td>USA (South)</td>
<td>18-39</td>
<td>MSM</td>
<td>801</td>
<td>54.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graham et al., 2016</td>
<td>USA (South)</td>
<td>15-23</td>
<td>MSW, Black; clinical</td>
<td>494</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. *M* = mean; MSM = men who have sex with men; MSW = men who have sex with women; MLWH = men living with HIV/AIDS.
Table 4

*Penile Dimension Measurements Across Sources*

<table>
<thead>
<tr>
<th>Source</th>
<th>Location</th>
<th>Age Group</th>
<th>Population</th>
<th>Measurement</th>
<th>N</th>
<th>Length (mm)</th>
<th>Circumference (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Place not specified</td>
<td>Base</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M (SD)</td>
<td>Range</td>
</tr>
<tr>
<td>Richters et al., 1995</td>
<td>Australia</td>
<td>18-55, $M = 33$</td>
<td>Men, primarily white; clinical</td>
<td>Self-measure</td>
<td>156</td>
<td>159.9 (38.3)</td>
<td>117 – 225</td>
</tr>
<tr>
<td>Wessells et al., 1996</td>
<td>USA (West)</td>
<td>18-72, $M = 27.4$</td>
<td>Men, primarily white; clinical</td>
<td>In lab</td>
<td>80</td>
<td>128.9 (29.1)</td>
<td>75 – 190</td>
</tr>
<tr>
<td>Smith et al., 1998</td>
<td>Australia</td>
<td>18-72, $M = 30.0$</td>
<td>Men, primarily white and MSW</td>
<td>Self-measure</td>
<td>194</td>
<td>157.1 (23.1)</td>
<td>90 – 260</td>
</tr>
<tr>
<td>Reece et al., 2006</td>
<td>USA (All 50)</td>
<td>18-72, $M = 27.4$</td>
<td>Men, primarily white and MSW</td>
<td>Self-measure</td>
<td>820</td>
<td>141.5 (26.6)</td>
<td>40 – 260</td>
</tr>
<tr>
<td>Reece et al., 2009</td>
<td>USA (All 50)</td>
<td>18-72, $M = 30.0$</td>
<td>Men, primarily white and MSW</td>
<td>Self-measure</td>
<td>1,661</td>
<td>141.5 (26.6)</td>
<td>50 – 260</td>
</tr>
</tbody>
</table>

*Note. M = mean, SD = standard deviation, MSW = men who have sex with women.*
Table 5

*Condum Dimension Information Availability on Websites of Condom Brands*

<table>
<thead>
<tr>
<th>Condom Brand</th>
<th>Country</th>
<th>Sub-Brands</th>
<th>Product Dimensions Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caution Wear</td>
<td>USA</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Ceylor</td>
<td>Switzerland</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Durex</td>
<td>USA</td>
<td></td>
<td>Some products, widths only</td>
</tr>
<tr>
<td>Glyde</td>
<td>USA</td>
<td></td>
<td>Yes&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Green Condom Club</td>
<td>Switzerland</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Kimono</td>
<td>Japan</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Lifestyles</td>
<td>China</td>
<td>Lifestyles</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SKYN</td>
<td>No</td>
</tr>
<tr>
<td>My.Size</td>
<td>Germany</td>
<td></td>
<td>Widths only</td>
</tr>
<tr>
<td>Naked</td>
<td>USA</td>
<td></td>
<td>Widths only</td>
</tr>
<tr>
<td>Okamoto</td>
<td>Japan</td>
<td>004</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beyond Seven</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Crown</td>
<td>No</td>
</tr>
<tr>
<td>ONE</td>
<td>USA</td>
<td>ONE</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MyONE</td>
<td>Uses random measurement codes for available condom sizes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TheyFit&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Provides range available; Uses random measurement codes for available condom sizes</td>
</tr>
</tbody>
</table>
Table 5 (continued).

<table>
<thead>
<tr>
<th>Condom Brand</th>
<th>Country</th>
<th>Sub-Brands</th>
<th>Product Dimensions Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasante</td>
<td>UK</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>RFSU</td>
<td>Sweden</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Royal</td>
<td>USA</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Sustain</td>
<td>USA</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Trojan</td>
<td>USA</td>
<td>Trojan</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Magnum</td>
<td>No</td>
</tr>
<tr>
<td>UNIQUE</td>
<td>USA/Canada</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Note. Out of the 27 total brands included in the condom dimensions analysis (not including sub-brands), 8 brands did not have a website but appear to still be producing condoms (Atlas, Billy Boy, Contempo, Maxpro, Night Light, Playboy, Sensis, Trustex) and 2 brands have been fully discontinued (Sir Richard’s & Vivid). This is L. Inc. no longer lists any condoms on their website. Country refers to the location in which the ownership of the brand or parent company is based. Manufacturer is included only if different from the brand company. The brands marketed as sized-to-fit are My.Size, MyONE, and TheyFit.  

aWebsite includes two sets of product dimensions on different webpages, with 10–15 mm length discrepancies for two products.

bTheyFit is now sold under the myONE brand. The TheyFit website will be phased out in 2020 (TheyFit, 2020b).
**Figure 1.** Depicts the interactions among condom design characteristics, specifically width and material elasticity, and penile dimensions to produce the degree of pressure exerted by the condom on the penis. Adapted to account for penile length in addition to circumference and to include a representation of a narrower condom from *Contraception, 52*(4), Gerofi, J., Deniaud., F., & Friel, P, Interaction of condom design and user techniques and condom acceptability, 226, Copyright (1995), with permission from Elsevier.
Figure 2. A version of the Condom Use Experience (CUE) model, adapted to emphasize the role of condom fit, including the additional variables of pleasure and insufficient coverage of the penis, as well as additional pathways of influence that the literature suggest may exist (i.e. product availability directly influencing condom fit). The CUE was theorized originally by 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), 93. This version is adapted from Anstee, S., Shepherd, J., Graham, C. A., Stone, N., Brown, K., Newby, K., & Ingham, R. (2019). Evidence for behavioural interventions addressing condom use fit and feel issues to improve condom use: A systematic review. Sexual Health, 540.
Figure 3. Out of the 141 unique products included in the condom dimensions analysis, 47 condoms had discrepant reported measurements across sources (defined as 2 mm for width and 4 mm for length). This bar graph categorizes the condoms with multiple width measurements by the range of their reported values. Reported widths differed from 2 to 3.99 mm for 16 condoms and from 4 to 7.99 mm for 11 condoms; three condoms had reported widths that differed by more than 8 mm.
Figure 4. Out of the 141 unique products included in the condom dimensions analysis, 47 condoms had discrepant reported measurements across sources (defined as 2 mm for width and 4 mm for length). This bar graph categorizes the condoms with multiple length measurements by the range of their reported values. 14 condoms had reported lengths differing by 4 to 9.99 mm, 23 condoms by 10 to 19.99 mm, and seven by 20 to 29.99 mm.
Figure 5. Shows all reported width measurements (N = 229) across the 141 unique products drawn from web search results regarding condom fit and included in the condom dimensions analysis. Values of reported widths ranged from 34 to 69 mm ($M = 52.65$, $SD = 4.01$, $Mdn = 53.0$). The most frequently reported condom width was 53 mm. The values for the mean and median widths are similar, indicating that they are distributed approximately normally.
Figure 6. Shows all reported length measurements ($N = 222$) across the 141 unique products drawn from web search results regarding condom fit and included in the condom dimensions analysis. Values of reported lengths ranged from 120 to 240 mm ($M = 194.71$, $SD = 14.86$, $Mdn = 194.0$). The most frequently reported condom length was 190 mm. The values for the mean and median lengths are similar, indicating that they are distributed approximately normally.
Appendix

Recommendations for Condom Users

Penises come in many shapes and sizes, and so do condoms (Go Ask Alice!, 2015). It’s important to find condoms that properly fit your penis or your partners’ penis(es) before engaging in sexual activity with other people in order to maximize the amount of comfort and pleasure that you and your partner(s) experience (Stacey, 2020a; White, 2014).

Condoms that fit well are also better able to protect against STIs and unintended pregnancy because poorly fitting condoms are more likely to break or slip off (Go Ask Alice!, 2018; Scaccia, 2018). Although most condoms are slightly longer than the average erect penis length (Haney 2019), those with longer penises may require longer condoms in order to ensure that no part of the penis is left exposed to STIs, some of which can be transmitted through skin-to-skin contact, including HPV and HSV-1 (Go Ask Alice!, 2017).

In order to determine which condoms will be appropriate for you or your partner(s), start by measuring the penis while erect (Ratini, 2019). You can use a measuring tape or a piece of string and a ruler. Measure the length of the penis from the pubic bone to the tip of the penis and then wrap the measuring tape or string around the thickest part of the penis to measure the girth; if using string, mark where it overlaps and then measure it against the ruler (Eske, 2020; Stacey, 2020b).

An alternate method of determining which general condom size is right for you is the less precise but very simple method of measuring the girth of the penis using an empty toilet paper roll (Cecil, 2020; Lucky Bloke, 2020). Slide it onto an erect penis. If there is some extra room, you may want to try using slimmer condoms. If it fits about right, select standard width condoms, and if it is too tight, then opt for larger or wider condoms.

If you choose to measure the dimensions of the penis, it is important to understand how to use those dimensions to find appropriately sized condoms. The condom you select should be slightly longer than the length of the penis. If there is too much unrolled material at the base of the penis, try a shorter condom; if there is nothing left to unroll, or if some of the penis is still exposed, opt for longer condoms (Haney, 2019).

Finding condoms with the right girth is a bit more complicated. If condom brands provide product dimensions, they most commonly list the “nominal width” of condoms, which refers to the width across the condom when the condom is flat and not the circumference of the condom (TheyFit, 2020b). In order
to calculate the right condom width, divide the measurement of penile girth by 2.25 to get an estimation of appropriate condom fit. This is because the material of condoms is intended to stretch between 10 to 20% when they are worn (Lara, 2013a).

Unfortunately, most brands do not make their product dimensions readily accessible (Eske, 2020) and navigating vague labels can be tricky, especially since terms such as “snugger” or “XL” are not standardized across brands (Go Ask Alice!, 2017). In fact, some condoms marketed as “large” are the same size as most standard condoms (Haney, 2019). There are also multiple shapes of condoms, and multiple dimensions of the condom play a role in condom comfort, such as the width of the base or head of the condom (Haney, 2019).

Since there are many variables that impact how condoms feel, experiment with condoms across multiple sizes, shapes, brands, and materials to see what feels best (American Sexual Health Association, 2020; Kendall, 2011; Ratini, 2019). Non-latex condoms, especially those made out of polyisoprene, tend to be softer and more elastic than latex condoms, often making them more comfortable (Ian, 2013). Most condom vendors sell variety packs, some of which are offered in general size categories, which can make it easier to find condoms that fit comfortably (White, 2014). If you use condoms when you have sex but don’t wear the condoms yourself, keeping a variety of differently sized condoms on hand prepares you for having a good match for your partner(s) (Corinna, 2011; Wong, 2017).

It is generally best to test condoms you haven’t tried before by wearing them to masturbate to see how they feel on your penis while erect (Go Ask Alice!, 2018). That way, you can get a sense of how the condom feels without the distraction of a partner and you can be sure you have comfortably fitting condoms for when you do have partnered sex to provide the maximum degree of protection and pleasure (Family Planning Association, 2015).

Condoms should be snug so that they stay in place, but not so tight that they are uncomfortable (Kendall, 2011). There should not be excessive bunching of condom material at the base of the penis nor any skin of the penis still exposed (TheyFit, 2020c). If there are marks on your skin after removing the condom or it feels like your circulation is being affected, try wider condoms (Moore, 2018).

Finding condoms that fit correctly is important for both safe and pleasurable sex. There are many different types of condoms out there, all it takes is some measuring and experimentation to find ones that feel comfortable.