DETERMINANTS OF CONDOM-USE BEHAVIOR
FROM STUDIES USING THE HEALTH BELIEF MODEL
(A Literature Review)

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ABSTRACT
This is a review of publications addressing aspects of the Health Belief Model (HBM) in predicting condom-use behavior. Five articles were identified as the most relevant and are included in the bibliography based on the coverage of variables of theory that were studied in the articles. There are various results from five articles that discussed the Health Belief Model. According to the review, the variable that best predicts condom use behavior is the perceived barrier. There are also some recommendations to be considered for future study of HBM theories. The HBM needs to have greater applicability to a range of social classes. In many cultures traditional gender roles consider it inappropriate for women to discuss sex, suggestion to use condoms may imply infidelity and unequal power in sexual relationships may hinder women’s ability to protect themselves or at least hinder discussing past risk behaviors of their male partners. More work is also needed to specify and measure factors which should be added to the HBM, thereby increasing the model’s predictive power. Theorists need to be as precise as possible in specifying the causal relations among the components in their models. Theorists need to be more willing to address the limitations of their models. Future studies in condom use behavior should incorporate the factor of partner type, or establish it as a separate and distinct variable. Old measures of health concepts need to be replaced with new measures.

INTRODUCTION
This is a review of publications addressing aspects of the Health Belief Model in predicting condom-use behavior. A large body of literature exists on the positive impacts of condom-use as a protective tool against HIV/AIDS. Some of the well known theories to predict condom use behavior is the Health Belief Model. Much has been written on the effectiveness of both theories in predicting condom use behavior in order to minimize the risk of infection by HIV/AIDS.

Initially, this review was concerned with bringing together literature on the Health Belief Model in predicting HIV/AIDS preventive behavior in general. However, so many articles were found that the review was narrowed down according to a specific behavior, which is condom-use behavior. Key studies and academic articles that have examined both theories on predicting condom-use behavior are organized by the year of publication with the aim of stating clearly what is known and not known about the variables influencing condom use behavior by HBM. Thus, this literature review aims to highlight recent findings on the Health Belief Model in predicting condom-use behavior; it is intended as a resource for all who are engaged in researching, designing, implementing or evaluating HIV/AIDS prevention programs.

BACKGROUND
Worldwide, at least 33 million people are living with HIV/AIDS, and another 14 million have died. An estimated 16,000 new infections occur every day. About 6 of every 10 new HIV infections are to women, and many newborns contract the virus from infected mothers. Worldwide the number of men, women and children living with HIV or AIDS is estimated to be 42 million and the number continues to rise (UNAIDS, July 2002). With the current rate of over 16,000 new infections per day, there
are an unprecedented number of people living with HIV/AIDS needing care and support. It is estimated that 95% of individuals with HIV/AIDS lives in developing countries (UNAIDS, July 2002). Globally, the fight against the AIDS pandemic has been predominately driven by research as well as massive education and behavior change efforts, and harm reduction campaigns to reduce the rate of HIV infection. The prospects for developing means for destroying the virus within the body (i.e., a vaccine) are encouraging albeit a cure remains undiscovered. Since the late 1980s, public health professionals, sociologists and psychologists have declared that the most hopeful approach to the prevention of AIDS is through the strategy of education and behavior modification.

At the end of 1998 at least 33 million people had HIV/AIDS, and another 14 million people had died as a result of HIV/AIDS (UNAIDS, 2002). Globally, an estimated 333 million new cases of the four major curable STIs—gonorrhea, Chlamydia, syphilis, and trichomoniasis—occur each year among adults, with at least one-third of these in adults under 25 years of age (WHO, 1995). Prevalence and incidence of curable STIs are particularly high in developing countries (Feldblum, 1998; WHO, 1998). Among women of reproductive age in developing countries, STIs are the second most frequent cause of sickness and death, behind only maternal causes (World Bank 1993). Many of these cases of STIs could be prevented through correct and consistent use of condoms and other preventive behaviors.

Education concerning AIDS prevention focuses almost exclusively on safer sex practices and safer injection drug use. Considering that condoms are an important means of preventing the transmission of HIV, STDs and Hepatitis, there exists a proliferation of studies that have investigated the determinants of condom use. Generally such studies provide valuable information for developing effective condom promotion interventions or programs and for assessing trends in preventive health behavior change. Efforts to increase condom use are considered to be a good social, economic, and health investment. More condom use would reduce rates of HIV infection and slow the spread of AIDS so that emphasis could shift from dealing with the consequences of AIDS to meeting other health needs.

Recent surveys concerned with HIV/AIDS suggest that condom use has been rising and is often substantial among unmarried men and women. Surveys of contraceptive use among married couples indicate low levels of condom use and little increase in recent years. Estimating condom use is difficult. Surveys of AIDS-related behavior provide different data about condom use than do family planning surveys. The estimate of 6 to 9 billion condoms used worldwide each year is based partly on surveys of actual use and also assumes that, of the 8 to 10 billion condoms produced each year, 10% to 20% are never used.

Worldwide, condoms rank near the bottom among contraceptive methods used by married couples. About as many couples rely on vasectomy. Only female barrier methods, spermicides, and injectables are used by fewer married couples (UN, 1999). In developing countries the prevalence of condom use among married women of reproductive age is between 2% and 6% in about half of the countries surveyed and below 2% in the other half. In some countries where overall use of contraception is at low levels, condoms account for a
substantial proportion of all methods used. In Cameroon, Ghana, and Zambia, for example, fewer than 4% of couples use condoms, but condoms account for more than 10% of all contraceptive use (UN, 1999).

Through research on the correlates and predictors of condom use, a number of psychosocial factors, which are included in general models of health-related behaviors, have emerged as significant predictors of condom use. A model of condom use behavior would be beneficial in pinpointing those variables that are of greatest importance in predicting, explaining and understanding condom use. This information could also be used in developing curricula to prevent HIV/AIDS and other sex related diseases, evaluating educational programs, and in long-range forecasting of these behaviors. The Health belief Model has been used in research to predict condom use behavior and has a potential value to this purpose.

The current study assesses the plausibility and robustness of the HBM in predicting and explaining condom use behavior. This study is unique in that it provides information about condom use among different kinds of participants and in countries.

METHODOLOGY
Internet searches were conducted using databases that specialized in the social sciences and Health Sciences. Most source of journals were used in both the initial research and the update are Pub Med, Blackwell Synergy, Sage Journals Online, Science Direct, Springer Link and Swetswise. The keywords that have been used to locate the articles used in this literature review are:
- Health Belief Model
- Health Belief Model / HBM + HIV/AIDS

A search was performed for articles that linked Health Belief Model and Condom-use behavior. Approximately 60 relevant articles were located in the above databases. Of these, Five articles were identified as the most relevant and are included in the bibliography. The selections of these Five articles are based on the coverage of variables in each theory that were studied in the articles. In certain rare circumstances, an outstanding study that did not come up in the searches has been included as well. The full title and abstract of each of these articles, as well as the website where the article can be accessed, are included in this document. All of the information included in this document is taken from the results of these searches and is drawn from the websites and publicly available publications. This review does not present all relevant studies, but nonetheless the selection of papers that was made will illuminate the broad field that is currently being examined, and reveals areas requiring further study.

LIMITATIONS
This bibliography does not purport to be a comprehensive list of articles and organizations that engage with the Health Belief Model and condom-use behavior. At this time, the bibliography is limited to English-journal articles and other publications. This research was limited to internet-based searches in an effort to ensure that all of the resources included here are easily accessible.

THEORETICAL FRAMEWORK
The Health Belief Model

The HBM was first developed during the early 1950s in the United States. It became evident that the
continent experienced widespread “failure” to convince people to accept disease preventive behaviors or screening tests for the early detection of asymptomatic diseases, such as tuberculosis (Rosenstock, 1974a). This phenomenon, whereby knowledge concerning a disease and its preventive strategies will not ensure preventive health action (or behavior change), exists even to date. The basic doctrine of the HBM, derived from psychological and behavioral theory, maintains that behavior is largely a function of two factors: 1) the value placed by an individual on a specific goal (in this case health) and 2) the individual’s estimate of the likelihood that a certain behavior or action will achieve the specific goal.

When these variables are considered in the context of behavior related to health, the associations are: 1) the desire to avoid an illness (or to become well if already ill) and 2) the belief that certain actions will prevent an illness, or make a current illness less severe (or eliminate it) (Janz & Becker, 1984). That is, the individual’s estimated threat of an illness and the likelihood of being able to reduce that threat through personal action will determine if she/he will engage in preventive behaviors. The literature indicates that the HBM is useful for predicting health–related behaviors (Rosenstock, 1974a) such as breast cancer screening; fertility control; decisions to seek care; and HIV–related sexual behaviors (Dobe, 1994).

The Health Belief Model (HBM) explains health behavior from a social psychology perspective using the theories of value-expectancy and decision-making. The model concentrates on dimensions influencing an individual’s control over a specific action and uses these same dimensions (or variables) to predict behavior. (Rosenstock, 1974b) proposes that in order for an individual to take action to avoid a disease, the individual needs to believe that (a) he or she is susceptible to the disease (perceived susceptibility); (b) the disease could have at least a moderately severe impact on some component of his or her life (perceived severity); (c) certain behaviors could be beneficial in reducing his or her perceived susceptibility or severity in the event of affliction with the disease (perceived benefits); and (d) these behaviors would not be impeded by factors such as cost, pain, and embarrassment (perceived barriers).

In an attempt to improve its predictive ability, researchers expanded the HBM to include the concept of self–efficacy. In the mid to the late 1980s, the model’s original founders suggested augmenting the HBM to include self-efficacy as its use had been criticized for lacking this measure. It was accepted that the presence of self-efficacy is necessary when adopting preventive behaviors. Self–efficacy is a person’s belief in how capable he or she is of performing a certain behavior. Generally, a separate dimension of self-efficacy was not readily added or used by social science researchers using the HBM, although some have used social learning theory based on the work of Bandura (1986) to integrate the concept of self-efficacy into the HBM. Therefore, a major assumption of the HBM is that the beliefs of the individual determine behavior to a greater extent than the objective environment (Rosenstock, 1974b). In this regard, the model concentrates on phenomenological aspects of the individual and, to a lesser degree, the history or past experiences of the person.

When applied to HIV sexual risk behavior, the Health Belief Model
suggests that simple knowledge and awareness about HIV will not necessarily result in reduced risky behavior. Instead, the model identifies four interrelated elements that must be present for knowledge about HIV to be translated into preventive action (Mahoney, Thombs, & Ford, 1995; Yep, 1993). First, a person perceives that he or she is susceptible to HIV. Second, that individual must perceive HIV infection to be a serious condition. Third, he or she must perceive that there are benefits to taking preventive action. Finally, this person must also perceive that the potential barriers to taking preventive actions are outweighed by potential benefits. Thus perceived susceptibility, perceived severity, and perceived benefits are thought to be positively related to HIV/AIDS preventive behavior, while barriers to taking action are thought to be negatively related to it (Yep, 1993).

Numerous studies have yielded support for the Health Belief Model as a potentially useful tool in designing HIV educational and behavioral interventions. This model is premised on the notion that what people think about a particular behavior and about the likely rewards or consequences of engaging in that behavior will have a direct impact upon their subsequent involvement in that behavior. The factors effecting such expectations (e.g., past experiences with childhood maltreatment and psychological problems like depression) are, therefore, important to understand if one wishes to comprehend someone’s behaviors.

**Condoms**

Condoms provide a highly effective protection against HIV infection when used correctly with every act of intercourse. All 10 cohort studies conducted in 1995 that evaluated condom use among heterosexual couples showed that consistent condom use protected against HIV (Feldblum, et al, 1995). Widespread and consistent use of condoms could reduce the number of people infected with HIV enough to slow the spread of HIV/AIDS (Peter Lin, Jane M. Simoni, and Vance Zemon. 2005). Condoms may help prevent AIDS over the long term not only by blocking transmission of HIV but also by protecting against other STIs. People with STIs, particularly those that cause genital ulcers—chancroid, genital human papillomavirus (HPV), herpes simplex, and syphilis—are two to seven times more likely to become infected with HIV than people who do not have STIs (Feldblum, 1998; Laga et al, 1991, 1993; Pepin et al, 1991; Plummer et al, 1991).

For condoms to be effective, however, people must use them consistently and correctly. Even in the face of AIDS, people are unlikely to use condoms for every act of sexual intercourse. Still, some use is better than none (Pinkerton, S.D. and Abramson, P.R., 1996). Although not providing perfectly "safe sex," condoms substantially reduce the risk of individual infection. Laboratory tests show that no STI, including HIV, can penetrate an intact latex condom (Conant et al, 1986, 1984; Feldblum, 1998; Katznelson et al, 1984; Katznelson et al, 1984; Rietmeijer, 1988; Smith JR et al, 1998). (Infectious organisms can sometimes pass through condoms made from lamb's intestine, often called natural skin condoms, so they should be used only for contraception, not infection prevention (Cates JR., W. and Stone, K.M, 1992; Minuk, G.Y., Bohme, C.E., and Bowen, T.J, 1986).

Incorrect use of condoms may results in pregnancies and infections.
Breaks or tears can result from incorrect use such as unrolling the condom before putting it on, trying to put on the condom with the rolled rim held toward the body rather than away from it, snagging the condom with fingernails or rings, and reusing condoms (Spruyt, A et al, 1988). Other poor practices allow unprotected contact—starting intercourse and then withdrawing to put on the condom, or not holding the condom rim while withdrawing after ejaculation, allowing the condom to slip off and spill semen (Oakley, D. and Bogue, E.L, 1995; Spruyt, A et al, 1988).

Using lubricated condoms or appropriate lubricants with condoms can help reduce breakage. Lubricants used with latex condoms must not contain oil, however. If poor-quality condoms are distributed, people suffer, money is wasted, and the image of condoms is hurt. Exposure to ultraviolet light, heat, humidity, and ozone makes latex deteriorate and thus weakens latex condoms (Baker, R.F et al, 1988; Free, M.J. and Srisamang, V. 1989; Usher, M, 1999; Voeller, B.,et al, 1989). The longer condoms are exposed to these conditions, the more easily they break. A new standard from ISO covers condoms intended for tropical climates. These requirements include packaging in impermeable foil laminate, which completely prevents oxidative deterioration even at high temperatures (Free, M.J, 1999; Free, M.J.,et al, 1996).

During the past decade a few new types of condoms have reached the market, and other new condoms are being designed and tested. Perhaps the most important event has been the introduction of the female condom, which has proved popular and is now used in over 30 countries (Usher, M, 1996). One important advantage of the female condom is that women have more involvement in initiating use (AIDSCAP, 1997; Free, M.J., 1998). Still, power issues, communication skills, and the complex skills of negotiation and joint decision-making are important for successful use of the female condom, as with the male condom (AIDSCAP, 1997; Ankrah, E.M. and Attika, S.A, 1997; Cabral, R., et al, 1998). Studies report that men's objections have led to discontinuation of use by some women (Brown, M., 1998; Murphy, D.A et al, 1997; Young, A, 1997). Many studies are currently underway about negotiation and other aspects of the use of female condoms (Mobley, S, 1998).

The female condom also has disadvantages. The fact that it covers the external genitalia makes it unattractive to some. Also, it can be noisy, and some women find it painful to use, especially due to the inner ring. It can be difficult to manipulate and insert, especially for inexperienced users. It can be displaced during intercourse. It may not appeal to some women if they associate it, like the male condom, with prostitution and infidelity (Ankrah, E.M. and Attika, S.A, 1997; Chilufya, H, 1998; Kalckmann, S et al, 1998; Pool, R,et al, 1998).

Male condoms are now being made from plastics as well as latex and in new designs. These condoms are intended to be easier to use and more comfortable and pleasurable. The new plastic condoms are approximately the same thickness as latex condoms (Free, M.J,1998; Gilmore, C.E., 1998), are less constricting, not harmed by oil-based lubricants, and do not cause allergic reactions (Frezieres, R. and Walsh, T, 1999; Nelson, A. et al, 1996; Stone, K, 1998). They deteriorate more slowly than latex condoms, although if latex condoms are packed in laminated foil
they also are very stable (FREE, M.J, 1999).

The AIDS epidemic and rise of other STIs have increased interest in finding new condom lubricants, especially those that may also be effective against infections. Some condoms are lubricated with the spermicide nonoxynol-9 (N-9). N-9 kills HIV and some, but not all, other STIs in the test tube (Hermonat, P.L., Daniel, R.W., and Shah, K.V, 1992; Palacio, H, 1997; Wittkowski, K.M, 1997). In addition, N-9 may irritate the vaginal lining and increase the risk of urinary tract infections (Acton, S. and O’meara, Y.M, 1997; Steiner, M.J. and Cates JR., W, 1998; Warner, D.L. and Hatcher, R.A, 1998).

DESCRIPTION AND DISCUSSION OF FINDINGS
Study 1 Factors Associated with Condom Use in Kenya: A Test of The Health Belief Model (Jonathan Volk and Koopman, 2001)

On the highways and streets of Kisumu, billboards warn, “AIDS is Real. Protect Yourself & Your Family”. In a community with a seroprevalence of approximately 25%, these signs warn that HIV is a very serious and deadly disease. Although such billboards focus on building greater community awareness of HIV, the results of this study suggest that the perceived severity of the disease has been recognized by the majority of the Kisumu subpopulation attending health clinics. Among women and men, perceived barriers were the only component of the Health Belief Model that was found to be significantly related to condom use. This suggests that educational efforts need to address perceived barriers in altering condom use in this community. The responses to items in the perceived barriers scale reveal that more than 40% of study participants believe that condoms are difficult to use and that more than 70% report that their partners do not like to use condoms.

Additionally, knowledge about HIV/AIDS is found in this study to be significantly related to condom use among men, although this relationship was not found to be significant for women. Despite the fact that women are as knowledgeable as men about HIV/AIDS transmission, prevention, and treatment, they may lack the empowerment or the skills to translate this knowledge into action. This interpretation is consistent with the observation of Bond and Dover (1997) that women in rural Zambia have less power to negotiate condom use than do their male partners. Similarly, a study of barriers to condom use in Bombay, India, observes that women are often unable to decide to use a condom to avoid HIV/AIDS infection (Roth, Krishnan, & Bunch, 2001).

Men who believe HIV originated in the United States were found to be significantly more likely to use condoms than other men. Perhaps HIV is especially salient among those who feel that HIV originated in the United States, and these individuals may in turn be more likely both to inform themselves about this potential danger and to protect themselves. Alternatively, they may be more suspicious and therefore hyper vigilant. Stigmatizing beliefs were not found to be related to condom use in this study; those who believe that AIDS is a punishment for sins or a violation of social taboos were no less likely to use condoms. However, in communities such as Kisumu where HIV is alarmingly common, this prejudice may have other serious implications.
Study 2 The Health Belief Model and Safer Sex: Implications for Women’s Health (Toepell, 2003)

The Health Belief Model was partially able to predict condom use in this study. Not all variables tested were useful in predicting condom use and only after this behavior was linked with a new factor “sexual partner type” and then re-analyzed, did the model perform as expected. In the context of this study, the model’s variables do not influence condom use when analyzed in isolation. They do, however, influence condom use when all variables are analyzed in combination with each other.

It was found that not knowing the partner more likely initiated condom use. Also, participants with multiple partners were more likely to use condoms than participants with a single steady partner only. However, prisoners stop using condoms with partners after an average of four weeks, assuming enough time has past to assess their own potential level of risk for HIV exposure due to their female partners’ past behaviors: “She’s clean, it’s OK”. It can be argued that not “knowing the partner” is more an element of the model’s cues to action variable than a component of a separate and distinct variable because it acts as a prompt or trigger to use condoms. If this element is truly a function of a cue, then its intensity should be measurable against the differing levels of perceived susceptibility and severity.

The constructs belonging to the HBM were generally effective in predicting condom use behavior. The variable of cues to action and susceptibility both predicted condom use, however in an unexpected direction. That is, not knowing someone infected with HIV and not being concerned about contracting HIV during intercourse significantly predict condom use dependent on partner type (specifically for men with multiple partners). Again, these findings imply that factors external to perceived susceptibility and cues to action are likely interacting with condom use for individuals who do not have an HIV-infected acquaintance or who have low perceived self-risk. Although external to the model’s original constructs, measures of self-efficacy or social norms may be of influence here.

Prisoners in this research study do not consult with their partners concerning safer sex practices and they make decisions whether to use condoms based on how well and long they have known their female partner. If the woman is not an IDU who does not share needles, or if she has not had multiple partners, the man feels safe not to use condoms. The application of the HBM in this study has uncovered the way in which prisoners make decisions concerning making safe sex for them selves.

Study 3 Predictors of Condom Use among Adolescent Thai Vocational Students (Thato, Charron-Prochownik, Dorn and Stone, 2003)

The prevalence of premarital sexual behavior among Thai vocational students found in this study was considered high. Condom use by these sexually active teens was low. Only 6.3% reported using condoms every time when having sex in the beginning of their current sexual relationship, and 10.2% the last few times they had sex. These results are consistent with other findings reported in the literature. Participants in the study had incomplete or misinformation regarding condom use. The majority of condom users used condoms for the purpose of preventing
pregnancy (86.3%). Fewer than half of them used condoms to prevent AIDS and STDs. The low rate of condom use may have been because of the lack of perceived susceptibility to the negative outcomes of unprotected premarital sexual behavior as well as to cultural barriers.

Lack of knowledge of STDs, HIV/AIDS, and pregnancy might hamper adolescent condom use because preventive behavioral changes are partially dependent upon knowledge (Rosenstock, 1974a). As proposed in the Expanded Health Belief Model (EHBM), whether a person will take action depends on a rational decision-making process in which the person weighs the costs (barriers) and benefits of taking action (Janz & Becker, 1984). However, perceived barriers to condom use was not significantly predictive of condom use, possibly because of a nationwide campaign called “100% condom use” conducted by the Ministry of Public Health during the past decade. Such a campaign might reduce adolescents’ barriers to condom use.

Interestingly, the only construct of the EHBM that predicted actual condom use was perceived benefits from using condoms; which contributed the least to actual condom use ($r = .15$). The findings showed that the EHBM had limited utility for predicting condom use in Thai vocational students. The strongest predictor of condom use was the interaction of gender and intention to use condoms (Sexually active female students who had greater intention to use condoms reported greater condom use). The result is consistent with a meta-analysis conducted to quantify the relationship between intention and condom use.

Knowledge of STDs, HIV/AIDS, and pregnancy interacted with perceived preventive behavioral peer norms, and alcohol use interacted with age were significant predictors of condom use. The finding showed that neither age nor alcohol use independently influenced condom use. Three variables based on the EHBM failed to predict condom use: perceived susceptibility to STDs/HIV/AIDS and pregnancy, perceived barriers to condom use, and condom self-efficacy. A statistically non significant relationship between perceived susceptibility and condom use was also found by other researchers (Lollis, Johnson, & Antoni, 1997).

**Study 4 Towards an understanding of barriers to condom use in rural Benin using the Health Belief Model: A cross sectional survey** (Hounton, Carabin & Henderson, 2005)

The results showed there is a high awareness on AIDS in general and that women knew more about the modes of transmission of HIV/AIDS and its impacts than men. In addition, females were less likely to declare using condoms in general even though a higher proportion declared having used condom during the last occasional sexual intercourse. The measure of perceived vulnerability might not be sensitive enough to capture differences in perceived risks. In fact, all women and most men felt they were at risk of acquiring the infection, yet only a small proportion were using condoms. Another explanation may be that perceived risk is not a driving force in behavioral change in this subset of the population.

When only considering the percentage of condom use by gender, females appear to be at a higher risk of acquiring HIV even though they appeared to know more about
transmission routes and prevention methods. This might be due to the well established difficulty facing women in negotiating the terms of sexual intercourse. In fact, gender inequality is associated with poverty, condom with distrust and sexual economic exchange is not perceived as prostitution [Mahoney, Thombs, Ford, 1995].

Despite a relatively acceptable knowledge of modes of transmission and prevention methods, only a few of participants declared using condoms, which is an indication that a relatively good knowledge about HIV/AIDS, even though necessary, may not be a key factor in behavioral change in fighting HIV epidemic in the study population. These findings also indicate that programs which aim only at increasing awareness and knowledge may not succeed. Using the HBM to analyze the determinants of behavioral change in our study population, we can conclude that there is a high-perceived vulnerability and perceived severity, and yet this does not encourage condom use.

An important proportion of participants do not believe in the efficacy of condoms and there are barriers to the use of condoms. The results are comparable to that found in a similar study in the USA [Mattson M, 1999] and in a review of published studies using HBM [ReCAPP] where perceived barriers were found to be the single most powerful predictors of the HBM. The findings are also consistent with results of studies conducted in Kenya [Adih and Alexander, 1999] and in Ghana [Lollis, Johnson and Antoni, 1997], in which perceived barriers were found as being the strongest predictors of condom use.

Study 5 The Health Belief Model, Sexual Behaviors, and HIV Risk Among Taiwanese Immigrants (Lin, Simoni, and Zemon, 2005)

This study constituted the first attempt to investigate HBM constructs and sexual behaviors among Taiwanese immigrants in the United States. Results from an Internet survey of 144 respondents indicated that 11% of the participants were lesbian, gay, or bisexual. The average age at first sexual intercourse was 21 years. Sixty-three percent were non virgins, with 53% of the sample reported sexual intercourse in the past 12 months. Among these latter respondents, approximately 91% had sexual intercourse one to three times a week or less; 11% were not involved with steady partner(s); and 30% had 2 or more sexual partners. Regarding condom use consistency, 28% never or almost never used a condom in the last 12 months and 46% had not used a condom during their last sexual intercourse.

After demographics were controlled, participants who had lower self-efficacy for maintaining a monogamous relationship were likely to have more sexual partners. Also, participants who used condom less consistently tend to have less self-efficacy for using a condom consistently but perceived AIDS as a more severe disease. Next, participants who practiced more sexual intercourse had less self-efficacy for maintaining a monogamous relationship, using a condom consistently and also perceived fewer barriers practicing AIDS preventive behaviors. Furthermore, there were effects related to acculturation. Specifically, participants who felt less susceptible to HIV infection, had lower self-efficacy for using a condom consistently and perceived more (not
less) benefits practicing preventive sexual behaviors tended to have higher sexual intercourse frequency. These relationships tended to be stronger among more acculturated participants.

Although HBM constructs, as a set, were able to predict Taiwanese immigrants’ sexual behavior and self-efficacy constructs were shown to be the most reliable predictors. This result is consistent with the literature; studies have previously shown that higher levels of self-efficacy are correlated with increased safer sex practices. In addition, self-efficacy has been shown to be the strongest predictor of HIV risk behaviors within the HBM (Dobe, 1994; O’Leary, Goodhart, Jemmott, & Boccher-Lattimore, 1992).

However, these findings do no concur with the literature indicating that the other health belief constructs also are reliable predictors of HIV risk behaviors (Carmel, 1990). Yep (1993) examined the predictive power of HBM in relation to prevention of HIV infection among Asian American college students. He found that perceived severity and barriers were significant predictors of the adoption of HIV preventive behaviors. On the other hand, perceived susceptibility and perceived benefits had no substantial relationship to HIV risk behaviors. Although perceived severity, perceived barrier, and perceived benefits were significant predictors of Taiwanese immigrants’ sexual behaviors in this study, they were significant in the opposite direction of what the writer predicted.

CONCLUSIONS

The effectiveness of the Health Belief Model in predicting condom use behavior.

There are various results from five articles that have been reviewed. According to the review, the variable of the HBM that predict condom use behavior most was the perceived barrier. This variable keeps emerging in four articles from the total of five articles reviewed. The next variable in the Health Belief Model that commonly emerges is perceived benefits. This variable emerges in two articles as a significant predictor of condom use behavior. The other variables, which are perceived susceptibility, perceived severity and cues to action are also significant in predicting condom use behavior but significance emerges only occasionally depending on the study participants. Table 6.1.1 provides us information to give a clearer picture of the finding.

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<th>Variables in HBM Construct / Study</th>
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Table 6.1.1 Significant variables in predicting condom-use behavior from five articles reviewed

- Significantly effective in predicting condom-use behavior
- Not Mentioned or Not significantly effective in predicting condom-use behavior
List of studies:
Study 1 Factors Associated with Condom Use in Kenya: A Test of The Health Belief Model (Jonathan Volk and Koopman, 2001)
Study 2 The Health Belief Model and Safer Sex: Implications for Women’s Health (Toepell, 2003)
Study 3 Predictors of Condom Use among Adolescent Thai Vocational Students (Thato, Charron-Prochownik, Dorn and Stone, 2003)
Study 4 Towards an understanding of barriers to condom use in rural Benin using the Health Belief Model: A cross sectional survey (Hounton, Carabin & Henderson, 2005)
Study 5 The Health Belief Model, Sexual Behaviors, and HIV Risk Among Taiwanese Immigrants (Lin, Simoni, and Zemon, 2005)

RECOMMENDATIONS
Some recommendations for future review:

- The HBM needs to have greater applicability to a range of social classes. Literature indicates that social classes differ in the type of beliefs held and that lower social classes are not as prone to accept health beliefs of the kind prescribed by members of the higher classes (Rosenstock, 1974b). Presumably, all social classes believe that exposure to HIV/AIDS is to be avoided, however, purchasing condoms might be considered a luxury for lower class members and may not be a priority.

- In many cultures traditional gender roles consider it inappropriate for women to discuss sex, suggestion to use condoms may imply infidelity and unequal power in sexual relationships may hinder women’s ability to protect themselves or at least hinder discussing past risk behaviors of their male partners (Ehrhardt, et al., 1991; Simbulan, et al., 2001). The HBM is not sophisticated enough to account for such complex cognitive processes or psychosocial factors that keep women from raising the topic of condom use with a partner. For example, In a lower economy situation, condoms might not be regularly purchased, and the potential power asymmetry between men and women will make woman have less power to negotiate condom use and make women unable to decide whether to avoid HIV/AIDS sexual risk behavior .

- More work is also needed to specify and measure factors which should be added to the HBM, thereby increasing the model’s predictive power. Research focusing on the health belief model tends to overlook other factors that may explain additional variance in condom use, such as personality characteristics, self-esteem, and emotional distress. several factors involved in the decision-making process (such as environmental, intrapersonal and cultural factors) are neither measured nor identified.

- Theorists need to be as precise as possible in specifying the causal relations among the components in their models. General assertions that
variables are related (e.g. a list of variables hypothesized to predict a behavioral outcome) are difficult to disconfirm. More (experimental and longitudinal) research is to establish causal relations between expected determinants of behavior and the actual behavior.

- Theorists need to be more willing to address the limitations of their models.
- Future studies in condom use behavior should incorporate the factor of partner type, or establish it as a separate and distinct variable. The partner type is identified as the most common reason for discontinuing the use of condoms for a person with either steady or multiple type partners and for initiating the use of condoms with casual or anonymous partners.
- Old measures of health concepts need to be replaced with new measures. As behavioral change happens in an environment made up of any number of influential factors and persons, all factors cannot be identified and accounted for in a single research model.

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