

**An evaluation of Program M in Rio de Janeiro, Brazil: An analysis of change in self-efficacy in interpersonal relationships, gender equity, and self-reported risky behaviors among women in two low-income communities**

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## Abstract

This quantitative study examined whether Program M, an intervention targeting young women in a low-income community in the city of Rio de Janeiro, Brazil, promoted changes in gender equitable attitudes and self-efficacy in interpersonal relationships among program participants. Further, it investigated whether the program influenced these young women's behaviors, including the use of drugs, community engagement, condom use, sexual activity, and tolerance of violence.

To assess the program's effectiveness, a pre- and posttest quasi-experimental design was used. During pretest and posttest, 114 women in the program group and 159 women in the comparison group, all between the ages 14-24, responded to a Health Risk Behavior Questionnaire, the Self-Efficacy in Interpersonal Relationships Index (SEIRI), and the Gender Equity Scale for Women (GESW). Regression analyses were used to test two hypotheses, namely 1) that Program M has an effect on young women's levels of self-efficacy, gender equity and self-reported behavior change, and 2) that program effect differs by income, age, and education level of participants.

The results indicated that program M indeed had an effect on self-reported self-efficacy in interpersonal relationships, sexual activity, and drug use. In addition, the results suggested that Program M's effect on women's self-reported self-efficacy in interpersonal relationships varied by level of education. Program effects were greater for the least educated women, decreased with higher levels of education, and were not present among the best-educated women with roughly 10 or more years of education. The program's effect on self-reported sexual activity differed by age. Older women in the program were more likely to report increased sexual activity compared to younger

women. Further, the results suggest that the program may have decreased the probability of higher sexual activity among girls younger than 17 years of age. Program participation was also associated with decreased self-reported drug use. Finally, the program did not have an effect on women's self-reported levels of gender equity, tolerance of domestic violence, and community participation, even though those topics were included in the program's activities.

PREVIEW

## Introduction

Important changes are occurring in the Brazilian HIV/AIDS epidemic, in its third decade. With an estimated 600,000 people living with the disease (a prevalence rate of 0.61% among the general population), cases related to drug use have declined and recently, the prevalence of infection in male homosexual/bisexual population has stabilized. Simultaneously, however, the number of women who contract HIV through heterosexual relationships is increasing (Fonseca & Bastos, 2007). The incidence of HIV infection among young women aged 15-24 is 0.28%, a prevalence rate approximately 3.5 higher than that of young men (Ministério da Saúde, 2008). Since sexual initiation occurs earlier compared to previous generations, around the median age of 15 (Fonseca & Bastos, 2007), effective HIV prevention programs for young women must be created and implemented.

As in other countries, the development of preventive HIV/AIDS programs for women in Brazil requires an in-depth understanding of the factors associated with behavior change. Researchers find that 95% of Brazilians between the ages of 15 and 24 can cite the use of condoms as a method of HIV prevention (Szwarcwald, Barbosa-Junior, Pascom, & Souza-Junior, 2005). Condoms are available free of charge in public health posts throughout the country, and massive government campaigns promote the benefits of condom use to the population at large. Yet knowledge about HIV, its prevention, and condom availability do not necessarily translate into effective changes in behavior among those who are at risk for HIV infection. Only 39% of sexually active Brazilians between the ages of 15 and 24 report regular condom use with casual or permanent partners (Szwarcwald et al., 2005). It is estimated that 87% of women in



Brazil are sexually active by the time they reach the age of 24 (Ministério da Saúde, 2008). Given this reality, a substantial number of interventions have been developed and implemented to promote behavior change, such as increase condom use, improve negotiation skills in sexual relationships, and boost self-efficacy, among other changes. Most existing programs in Brazil adopt participatory strategies to involve young people in role-plays and group discussions. However, as presented later, the overwhelming majority of those programs have never been evaluated. The few evaluations that do exist are exploratory and qualitative, and they rarely address the effect of specific programs on attitudes or behaviors.

Program M (M, for *mulheres*<sup>1</sup> in Portuguese, and *mujeres* in Spanish) is one such intervention developed by a network of international and local Brazilian non-governmental organizations (NGOs) and implemented in the city of Rio de Janeiro by Instituto Promundo, a local NGO. Program M focuses on several processes that many researchers consider crucial to health behavior change, such as the notions of gender equity, self-efficacy, and the personal meaning of behaviors that place health at risk. Studies have found gender-equitable attitudes and self-efficacy to be associated particularly with positive health-related practices, such as condom use (Bauman, Karasz, & Hamilton, 2007; Burns & Dillon, 2005), low use of drugs, including alcohol (Hyde, Hankins & Deale, 2008), low tolerance of violence (Lerner & Kennedy, 2000), and high community engagement (Itzhaky & York, 2000). Studies have also documented the ways in which the personal meaning of risky behaviors in the context of close relationships

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<sup>1</sup> The translation for *mulheres* and *mujeres* is *women*.

(that is, youth's understanding of how risky behaviors affect their personal lives) can act as a catalyst for action (Levitt & Selman, 1993).

The current study examines whether Program M promoted gender-equitable attitudes and self-efficacy in interpersonal relationships among young women from a low-income community in Rio de Janeiro. Further, it investigates the likelihood that girls would self-report engaging in a variety of behaviors, including use of drugs, community engagement, condom use, sexual activity, and tolerance of violence. Specifically, it seeks to answer the following research questions:

Question 1: Does the program have an effect on young women's sense of gender equity and self-efficacy in interpersonal relationships?

Question 2: If a program effect on young women's sense of gender equity and self-efficacy is identified, does it differ by participants' income, age, and education level?

Question 3: Does the program have an effect on a variety of young women's self-reported behaviors?

Question 4: If a program effect on young women's self-reported behavior is identified, does it differ by participants' income, age, and education level?

To the best of my knowledge, no programs in Brazil have attempted to answer research questions similar to the ones presented above. Youth programs aimed at HIV prevention have been implemented throughout the country without evidence of their effect. Accounts of success or failure have been mostly anecdotal, partly because most programs lack either financial resources or monitoring and evaluation expertise to conduct such evaluations.

By answering the above questions, I intend to contribute to the program evaluation literature on HIV prevention programs in Brazil. In addition, I hope this evaluation will shed light on the areas of Program M that need improvement. Finally, I expect to increase the understanding of issues and strengths involved in offering and implementing programs that address young women's sexual and reproductive health behavior, and of the challenges associated with assessing changes in attitudes and behavior over time.

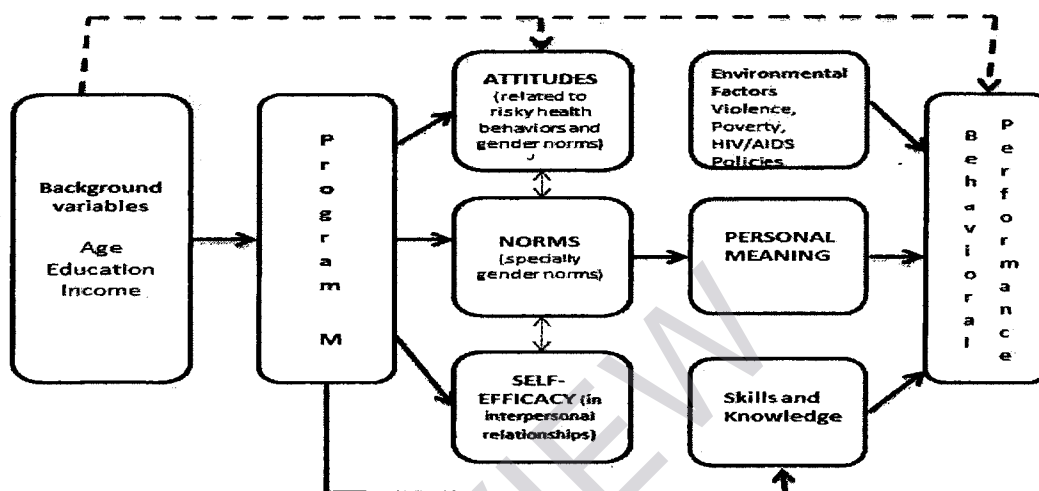
In the following sections, I describe the underlying theoretical framework for Program M. Then I provide the description of the Program and review the literature relevant to the themes examined in this study. I follow with a description of the principal features of my research design and the presentation of my results. I conclude with a discussion and the limitations of my research.

## Theoretical Framework

While no single psychological theory can explain young people's risk-taking and sexual behavior completely (Kirby, 2001), this study used the theoretical framework adapted from the integrative model proposed by Fishbein and Cappella (2006) to examine the effect of Program M. The model was created for analytical purposes to identify key variables that may explain and predict variance in any given behavior. It encompasses common psychosocial variables from behavior prediction theories, such as social learning theory (Bandura, 1977), social cognitive theory (Bandura, 1997), and a developmental theory, which help explain behavior change (Levitt, Selman, & Richmond, 1991).

The model proposes that given the background characteristics of a population or sample, an intervention such as Program M can be introduced to affect participants' knowledge, skills, and the personal meaning of risky health behaviors. Moreover, the model suggests that the program can affect personal meaning of risk-taking behavior and ultimately behavior performance by changing participants' attitudes, acceptance of gender norms, and their self-efficacy in interpersonal relationships. Thus, this comprehensive framework is particularly suited to help shed light on why interventions such as Program M may or may not succeed in changing risk-taking behavior in young women. All components of the model presented in Figure 1 and the mechanisms through which they may affect behavior performance are explained in more detail below.

Figure 1. Integrative model of Risk-Taking Behavior



The rationale for individual behavior performance, as presented in Figure 1, is that any given behavior is most likely to occur if (a) environmental factors support the behavior or there are no environmental constraints preventing behavioral performance; (b) one has the necessary skills and knowledge to perform the behavior; and (c) the behavior is meaningful to the person who is performing it. Below is a description of how these factors are hypothesized to work with particular reference to the health risks that are the focus of Program M.

## **The Environment**

Environmental factors, such as cultural traditions, policies and laws, economic conditions, and the political climate, play a distinct role in shaping behavior and can both induce as well as reduce risky behavior. More specifically, researchers have suggested that the environment plays an important role in shaping adolescents' risky sexual behavior (DiClemente, Salazar, & Crosby, 2007; Rotheram-Borus, 2000). In Brazil, several environmental factors have been shown to influence health behavior positively. Government has been successful in broadcasting media campaigns nationally in an effort to change risky sexual behaviors and implement risk-reduction programs for sexually active youth and adults, such as offering free HIV testing and providing free condoms. Furthermore, even though Brazil is a predominantly Catholic, 95% of young Brazilians do not see a conflict between being a Catholic and using condoms to prevent unwanted pregnancies and sexually transmitted diseases (Instituto Brasileiro de Opinião Pública e Estatística [IBOPE], 2007). However, certain environmental factors might induce risky behaviors. At the economic level, for example, high unemployment may lead youth to have low expectations about their future. Poverty is a key factor leading to sexual behavior that exposes people to the risk of contracting HIV infection (Collins & Rau, 2000). Programs aimed at decreasing youth unemployment by providing these youth with concrete skills to obtain employment may lead to reduced HIV transmission among this population. In Rio de Janeiro, unemployment is around 26% for all youth between the ages of 15 and 24 who are available for work and have taken specific steps to seek paid employment (Constanzi, 2009).

At the social level, violence in slum communities may obscure youth's perception of the dangers associated with unprotected sexual activities. Youth in the poor areas of Rio de Janeiro may not perceive AIDS as an immediate threat to their lives because they confront more immediate fears, such as being the victim of drug-related violence on the streets. As Hersch (1987) pointed out, "There are so many ways to die on the street that [youth] cannot focus on something that may kill them years from now" (p.37).

### **Skills and Knowledge**

Skills and knowledge also play an important role in behaviors that promote good health. In fact, to develop youth's resistance to risky behaviors, HIV prevention programs need to advocate both knowledge and skills simultaneously. Knowledge can be defined as "information and understanding of a specific topic...usually acquired by experience or by learning" (VandenBos, 2007, p. 516). Skill is the "ability or proficiency acquired through training and practice" (VandenBos, 2007, p. 857). In the context of this study, for example, knowledge of how to use condoms refers to the cognitive ability to process and understand that information, whereas skills refers to the ability to apply that knowledge whenever necessary.

Research in the field of HIV/AIDS education highlights the importance of knowledge, particularly knowing about the need to use condoms as a preventive measure and knowing how to obtain them from service providers. In Brazil, individuals generally understand the link between condom use and HIV/AIDS prevention. However, this knowledge may not always translate into practical skills when it is necessary. Further,

some studies have found that the level of knowledge about condom use and its relation to HIV/AIDS prevention varies among different populations. Szwarcwald et al. (2005) revealed that individuals with an incomplete high-school education knew, on average, less about condom use as a form of protection against HIV compared to individuals who had completed their high-school education (93.1% and 97.9%, respectively). This difference was found through a population-based survey conducted with 6,006 young people between 15 and 24 years old for whom the information is most salient.

Less is known about the skills of young Brazilians in low-income communities and their ability to act in ways to protect their health, especially when it comes to the prevention of HIV/AIDS. A person who learns certain skills (for example, assertiveness) can apply them in various social situations to reduce their risk of engaging in risky behavior. Selman and Adalbjarnardottir (2000) pointed out, youth must have “interpersonal negotiation skills (that is, [skills] about solving social conflicts and interpersonal negotiation strategies (that is, practical strategies for dealing with issues of conflict and closeness)” (p.50) to deal with the complexities of real life situations and to develop healthy behaviors.

Based on the evidence that Brazilian youth with lower education levels may lack the knowledge about HIV prevention and because little is known about the skills levels of youth in low-income communities, programs must teach both knowledge and skills explicitly to ensure that youth acquires the necessary information on HIV prevention. In fact, a qualitative study conducted by Levinson, Sadigursky, and Erchak (2004) with low-income Brazilian youth in Salvador revealed a need to teach youth how to use condoms and resistance techniques to oppose sexual pressure. The authors recommended that



interventions focus on recognizing youth's sexuality, encouraging deliberate decisions about sexual activity, and explaining the ways in which young men and women can protect themselves emotionally and sexually.

Finally, it is important to acknowledge that even though environment, skills, and knowledge are essential for changing behavior, neither environmental influences nor skills and knowledge determine risk-taking behavior, regardless of whether acting separately or together (Levitt et al., 1991). Individuals with skills and knowledge to protect themselves from HIV infection who live in environments that support healthy behaviors may still engage in behavior that puts their health at risk. This pattern suggests that motivational and affective factors, such as those listed below, are also at play in shaping youth health behavior.

### **Personal Meaning: Attitudes, Norms, and Self-Efficacy**

Personal meaning can be understood as the strength of the emotions associated with risk-taking behavior or the meaning of a given behavior for an individual in different contexts and in close relationships (Levitt et al., 1991). For instance, a given piece of information, such as the importance of using condoms to prevent HIV, may evoke different responses in different people or in different contexts. An individual's ability to access the personal meaning of such information is linked directly to the development of her self-reflective processes. These processes are assessed not in terms of chronological age, but in terms of maturity and ability to find adequate strategies for dealing with the correlates of risky behavior, such as fear of rejection (Levitt & Selman, 1993). The process of acquiring personal meaning awareness is associated with the developing

capacity to understand and express the root of one's risk-taking patterns through one's own life experiences (Levitt & Selman, 1993).

Providing factual information in a classroom setting does not affect directly or easily the awareness of personal meaning. Rather, personal meaning emerges from one's engagement in realistic situations or issues that have real consequences and may affect one's personal life (Levitt et al., 1991). Despite its importance in predicting health behavior within the theoretical framework presented in Figure 1, personal meaning does not always predict behaviors. According to Fishbein (2008), a person may intend to behave in a certain way but the absence of necessary skills and/or environmental restraints may prevent that person from doing so. While this quantitative study is not designed to measure personal meaning or its awareness directly (which would be more appropriately studied qualitatively), it includes an assessment of its determinants, which are explained below.

As indicated in theoretical framework presented in Figure 1, the determinants of personal meaning are *attitudes*, *norms*, and *self-efficacy*. *Attitude* can be defined as "any subjective belief or evaluation associated with an object" (VandenBos, 2007, p. 83). *Perceived norms* are "standard or range of values that represents the typical performance of a group or of an individual against which comparisons can be made" (VandenBos, 2007, p. 631). *Self-efficacy* is an individual's subjective perception of his or her capacity for performance in a given setting (VandenBos, 2007, p. 683). These determinants are associated with a person's beliefs about the consequences of performing a given behavior, the norms and/or behaviors of specific groups, and constraints associated with behavioral performance (Fishbein & Cappella, 2006). The framework postulates that a

positive *attitude* toward a behavior will emerge if a person believes the behavior will lead to “good” outcomes (Fishbein, 2008; Fishbein & Cappella, 2006). Likewise, a person will be motivated to behave in a certain way if she believes others should behave the same way and perceives social pressure to follow the *norms* associated with the behavior in question. Finally, a person’s *self-efficacy* will be stronger if she believes that she has the necessary skills to perform the behavior (Fishbein & Cappella, 2006).

### **Background Characteristics**

The background variables mentioned in Figure 1 define some of the distinctive characteristics of the population evaluated before the commencement of the program. The theoretical model shows that educational level, income, and age, may play a role both in the behavior as well as in factors that predict behaviors, such as self-efficacy. In Brazil, research documenting the relationship between education and risky behavior has demonstrated that individuals with less education begin their sexual life much earlier compared to those with higher education levels and present with a greater number of sexual partners and less frequent condom use, all of which are associated with the spread of sexually transmitted diseases, including HIV (Ministério da Saúde, 2002).

In the United States, research on the effect of education and income on health has also shown that women with lower levels of education and income tend to score significantly lower on measures of self-efficacy compared to women with higher levels of education and income (Barra-Johnson, 2006). Those findings attest to the growing evidence that background characteristics may affect health by influencing the underlying belief structure of different socio-economic groups (Fishbein, 2008). For example, a

person with a high education level may be more likely to believe that certain actions will lead him/her to achieve “good” things compared to a person with low educational level. Overall, people with low education may be less optimistic about the future and may take actions to jeopardize their health (Fishbein, 2008).

In summary, the superimposed integrative theoretical model underlying Program M draws on various above mentioned theories and findings, which identify several variables commonly associated with health behavior change. The model also accounts for the interdependence and the relative importance of each variable according to specific behaviors, attitudes, and populations. Although Program M developers did not articulate this theoretical framework, it elucidates the principles that guide the program and the mechanisms by which the program may have an effect on changing risky behaviors; therefore, it will be used to guide the analysis of program effects.

## Program M Description

A network of international and local Brazilian NGOs developed Program M. Instituto Promundo, a local NGO founded in 1997 in Rio de Janeiro implemented the program. Promundo works locally, nationally, and internationally to “promote young women’s awareness about gender inequities, rights and health and to help them develop skills so that they can feel more capable of acting in empowered ways in different spheres of their lives” (Instituto Promundo, n.d., para. 5). The materials developed by the researchers at this Institution are intended to promote change among individuals, families, and communities.

Program M, which targets youth, operates under the general assumption that self-reflection can induce changes in various components of the underlying model presented earlier, such as change in attitudes, self-efficacy, knowledge, and several health-risk behaviors. More specifically, program developers believe that their methodology can affect participants’ gender-equitable attitudes and norms positively, improve women’s self-efficacy in interpersonal relationships, support them in their reflections on the personal meaning of risk-taking when it comes to their health, and ultimately, help them change their behavior. Self-reflection is generated through group activities and peer discussions aided by a social communication campaign. Program M hypothesis stems from previous experience of Instituto Promundo staff in Brazil.

Program M targets women in slum communities, where environmental factors and personal backgrounds may negatively influence the determinants of personal awareness of the meaning of health and health risk behaviors. Program implementers utilize three educational resources to affect the views of women and their communities on gender

norms and attitudes and to increase women's self-efficacy in interpersonal relationships. The first resource is a manual with group activities to promote discussion, encourage reflection, and construct knowledge and skills on such topics as gender identity, sexuality, sexual and reproductive health, HIV/AIDS prevention, drug use, gender-based violence, maternity, education, work, and community participation. The second resource is a wordless cartoon video that focuses on various gender-specific topics. Finally, the third resource is a social communication campaign. The manual and the cartoon video are used to disseminate knowledge and to influence attitudes and self-efficacy with regard to condom use, prevention of HIV, women's rights, and gender equitable attitudes and behaviors. The video illustrates real-life situations encountered by many women and encourages reflection about the behaviors and themes presented in the manual. The social communication campaign/radio soap opera engages youth in promoting HIV prevention knowledge and gender equitable attitudes in the communities where they live.

The facilitators invite young women from the community (15–24 years) to participate in the program, which is free of charge. Facilitators then conduct small group activities, as described in the manual. These activities, constituting about 18 workshops, are held in community centers over a period of four months. They provide a context in which people can deliberate on their attitudes regarding Program M topics, thus theoretically creating the conditions for attitudinal change. A facilitator works interactively with these small groups of young women, utilizing techniques such as role-playing and discussing recent personal episodes. These techniques aim to influence participants' reflection of their self-perceived ability to improve health-promoting skills

in sexual relationships and in other aspects of their lives as well as of the personal meaning of risk-taking behavior.

The facilitators also use the cartoon video “Once upon a girl” to spark further discussions during the program. The video tells the story of a girl who begins to question the ‘dos’ and ‘don’ts’ of the world around her. Touching on topics ranging from children’s play and household roles to sexuality and intimate relationships, the video promotes critical reflection about the challenges girls and young women face.

The final piece of the program is a social communication campaign to promote positive changes in community norms related to gender and the acceptance of young women in diverse and empowered roles. The campaign consists of a radio soap opera written by young men and women in the slum communities with guidance from educators from Instituto Promundo. The soap opera is aired through the community radio station several times a day for a period of four months. It provides information about HIV/AIDS, reproductive health, and women’s rights. Young women participating in the program also distribute into the community animated strip booklets promoting images of empowered women and relationships that are more equitable. This social communication campaign is the only program piece that aims at influencing the community as a whole and not only youth.

The process of selecting facilitators to conduct program workshops is also an important aspect of the program. Instituto Promundo hires female facilitators between the ages of 30—45, who have had previous work experience in conducting health workshops for women in low-income communities. All facilitators have a Bachelors degree in psychology or social work. Facilitator training continues throughout the four

months of the program. Initially, facilitators attend a 40-hour training to learn how to conduct the workshops and to facilitate discussions about the manual and cartoon video. Subsequently, they participate in weekly three-hour group meetings with colleagues and trainers from Instituto Promundo, addressing challenges encountered during workshops. A more detailed description of overall program content can be found in Appendix A.

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