An Assessment of a Targeted Radio Campaign to Prevent STIs and HIV/AIDS in Mozambique

Andrew S. Karlyn

2001

Andrew S. Karlyn is a Ph.D. candidate at the London School of Hygiene and Tropical Medicine, Centre for Population Studies and former PSI Mozambique Technical Advisor for Monitoring Evaluation and Research from 1995 to 1998.

Acknowledgements

Data collection for this study was funded by grants from USAID Mozambique No. 656-A-00-96-0032-00 and The Royal Dutch Embassy in Mozambique contract No. MZ005902. PSI Mozambique conducts the 'JeitO' Condom Social Marketing intervention under the auspices of the Mozambique Ministry of Health, National Program for the Control of STDs and AIDS.

The author wishes to thank Paula Monjane from PSI Mozambique who supervised the fieldwork for the study, co-authored the baseline evaluation report, and made comments on this paper. The author gratefully acknowledges comments by colleagues at PSI, including Dominique Meekers, Francoise Armand, Muyiwa Oladosu, Clayton Davis, and Jill Shumann. Megan Klein edited the final version of the paper and provided substantive comments. Additional helpful comments came from Brent Wolff at the London School of Hygiene and Tropical Medicine and Stanley Yoder at Macro International, Calverton MD. An earlier version of this paper was presented at the Private Markets for Public Health Working Group Seminar, London School of Hygiene and Tropical Medicine, 22 September, 1999.

AN ASSESSMENT OF A TARGETED RADIO CAMPAIGN TO PREVENT STIS AND HIV/AIDS IN MOZAMBIQUE

ABSTRACT

Context: Over a period of 18 months during 1997 and 1998, Population Services International (PSI) carried out a targeted radio campaign in Mozambique to promote behavior change for the prevention of STIs and HIV/AIDS. The campaign consisted of a series of nine radio spots developed to stimulate risk reduction among specific groups identified by the project. Launched first in Portuguese in December 1996, the spots were translated into the ten most common local languages in Mozambique. By the end of the radio campaign in June 1998, the spots had aired over 10,000 times. This paper assesses the recall and impact of the radio campaign.

Methods: The evaluation was carried out over a period of two weeks using a two-stage random sample of individuals considered to be at risk of acquiring HIV or STIs. The target groups include in-school youth, out-of-school youth, and adults found in locations associated with risk behaviors, such as venues for commercial sex (nightclubs, bars, kiosks) and areas of high mobility (truck stops, police/military posts). A total of 754 individuals between the ages of 13-49 were interviewed.

Results: Just over half (52.4%) of all respondents heard the radio campaign. Recall of one or more specific messages of the campaign was reported by 45.5% of those interviewed. Detailed message recall had a strong effect on respondent self-efficacy as measured by one's intent, attempt, and self-reported 'success' in changing sexual behavior. A multivariate model demonstrates the significant effect that message recall has on self-efficacy. Among those exposed to the radio campaign, 97.2% reported intent to change their sexual behavior, compared to 62.8% of those not exposed to the campaign ($p < 0.001$). Among those who recalled campaign messages, 86.1% attempted to change their behavior, compared to 58% of those who had no message recall ($p < 0.001$). Finally, self-reported success in changing behavior is significantly higher among those with message recall (83.8%) than those without (56.8%) ($p < 0.001$).

Conclusions: Recall of both general and specific messages broadcast by the campaign was relatively high across target groups. However, all groups were exposed to several targeted messages, including those messages not targeted at them. This illustrates the difficulties in using radio to target a specific group with a corresponding behavior change message. The strategy of airing all 9 spots simultaneously with different but similar messages may have resulted in one spot 'stepping on' another and left many in the intended audience with no clear message. Even though the targeting of specific messages to specific groups was not effective, exposure to the radio campaign appears to have contributed significantly to changes in individual sexual behavior.

UMA AVALIAÇÃO DA CAMPANHA DE RÁDIO FOCALIZADA COMO MEIO DE PREVENÇÃO DAS DTS E HIV/SIDA EM MOÇAMBIQUE

RESUMO

Contexto: Sobre o período de 18 meses entre 1997 até 1998, a '*Population Services International*' (PSI) levou a cabo em Moçambique uma campanha de rádio focalizada em grupos específicos, cujo objectivo era de promover a mudança de comportamento para a prevenção das DTS e HIV/SIDA. A campanha consistiu de uma série de 9 *spots* de rádio desenvolvidos para estimular a redução de risco em grupos alvo identificados pelo projecto. Depois de radiofundidos em português em dezembro 1996, os *spots* foram traduzidos para 10 das línguas mais faladas em Moçambique e antes do fim da campanha em Junho 1998, foram lançados ao ar mais de 10.000 vezes. Este artigo avalia a memorização e o impacto da referida campanha de rádio.

Métodos: A avaliação foi feita durante um período de duas semanas, usando uma amostra aleatória de duas etapas dentro dum universo de indivíduos considerados estar em risco de adquirir o HIV ou DTS. Os grupos alvo incluiram jovens dentro e fora da escola e adultos encontrados em lugares associados com comportamento de risco, tais como locais de sexo comercial (clubes nocturnos, bares, quiosques) e zonas de alta mobilidade (paragem de camiões, postos da polícia e quartéis). Um total de 754 indivíduos foi entrevistado entre as idades de 13-49 anos.

Resultados: Apenas metade de todos os inquiridos (52,4%) relatou ter escutado a campanha de rádio. Dos entrevistados, 45,5% conseguiu memorizar uma ou mais mensagens específicas da campanha. Resultados menos favoráveis foram encontrados no processo de focalização dos *spots* a grupos específicos. A memorização detalhada da mensagem teve um efeito forte na 'self-efficacy' (auto-estima e confiança em levar ao cabo uma determinada acção) do inquirido, como medido pela 'intenção', 'tentativa' e 'sucesso' de mudar o comportamento (auto-reportado pelo inquirido). Uma análise estatística de múltiplas variáveis demonstra o efeito significativo da memorização duma mensagem da campanha na 'self-efficacy'. Entre aqueles expostos a campanha da rádio, 97,2% reportou a intenção de mudar o comportamento sexual comparado a 62,8% daqueles não expostos a campanha da rádio ($p < 0,001$). Entre aqueles que memorizaram alguma mensagem, 86,1% tentou mudar seu comportamento comparado 58% daqueles que não memorizaram nenhuma mensagem ($p < 0,001$). Por último, o sucesso de mudança de comportamento auto-reportado é significativamente mais alto entre aqueles com memorização de mensagem (83,8%) comparado àqueles sem nenhuma memorização de mensagem (56,8%) ($p < 0,001$).

Conclusões: A memorização das mensagens geral assim como específicas da campanha foram relativamente elevadas nos grupos em estudo. Contudo, todos grupos foram expostos a várias mensagens, incluindo àquelas não focalizadas a eles. Isto ilustra as dificuldades inerentes em usar o rádio como um meio de comunicação para focalizar grupos específicos com mensagens de mudança de comportamento correspondentes. A estratégia de radiodifundir 9 *spots* simultaneamente, com mensagens diferentes mas semelhantes, poderão ter resultado em um *spot* sobrepor-se aos outros, deixando muitos da audiência desejada sem uma mensagem clara. Ainda que a focalização das mensagens a grupos específicos não tenha sido efectivo, a exposição às campanhas da rádio parecem ter contribuído na mudança de comportamento sexual do indivíduo.

AN ASSESSMENT OF A TARGETED RADIO CAMPAIGN TO PREVENT STIS AND HIV/AIDS IN MOZAMBIQUE

INTRODUCTION

This paper examines the effect of a radio campaign on behavior change for the prevention of STIs and HIV/AIDS in Mozambique. Substantial evidence supports the use of mass media for changing behavior across a number of health promotion areas including family planning, smoking cessation, weight loss, exercise, and AIDS prevention (Kane, Gueye et al. 1998: 309). Interventions have used a variety of channels to reach their intended audience including radio, television, print media, and interpersonal communications (IPC) (Novelli 1990: 347-9; Valente, Poppe et al. 1995: 280).

In December 1996, Population Services International (PSI) initiated a radio campaign to promote safer sexual behavior among sexually active adults throughout Mozambique. The campaign used targeted radio messages to maximize available resources and affect desired health outcomes and thus increase impact (World Bank 1997: 81-5). Targeting refers to the practice of segmenting the population into unique and distinguishable groups to which specific products, services, or messages are directed (Dahl, Gorn and Weinberg 1997; Melkote, Muppidi and Goswami 2000). HIV/AIDS prevention programs define target groups by their relative risk of acquiring HIV/AIDS or STIs. Alternatively, targeting may focus on achieving equity in access to information, goods or services associated with an intervention. Targeting for HIV risk reduction and for equity objectives may or may not coincide (Hanson, Kumaranayake and Thomas 1998).

While targeting can be measured both in terms of coverage and efficiency, this paper concerns itself principally with issues of coverage. Two key questions are considered: first, did PSI Mozambique's radio campaign effectively reach its intended audience with respective messages tailored to each group?; and second, what impact did exposure to targeted messages have on the preventive behavior of the target audience? To address the former question, we will measure the recall of the campaign by target group. To address the latter we will examine the impact of the radio campaign on individual self-efficacy to avoid high-risk sexual encounters. The results will demonstrate the positive impact that a radio campaign can have on individual sexual practice and highlight the difficulties of targeting messages to specific groups.

CONDOM SOCIAL MARKETING IN MOZAMBIQUE

As part of a comprehensive behavior change communications activity for the prevention of STIs and HIV/AIDS, PSI began the social marketing of JeitO[1] brand condoms in Mozambique in April 1995. The project seeks to reduce the transmission of HIV and other sexually transmitted diseases by encouraging the adoption of safer sexual behaviors, including the use of condoms. To achieve this goal, the project increases both demand for and accessibility to condoms. Intensive behavior change communications are used to increase demand while access is assured by the distribution of condoms through the private commercial sector. A four-pack of condoms costs 1,000 Meticais, corresponding to approximately US$ 0.02 per condom at the time of the study.

When project activities began, radio was the only mass media with national coverage and became an important component of an integrated communications strategy used by the project (Davis 1997). The radio jingle "*Só Com JeitO*" (Only with Style) launched the brand in the Mozambican market in April 1995 and quickly raised brand awareness to near universal levels throughout the project's intervention areas. Interpersonal communications activities, including peer-education debates and street theater, complemented the mass media campaign. By June 1998, the project had conducted approximately 18,000 debates for 404,000 participants, averaging 20 debates per day over three years. During the same period, a total of 2,700 theater performances were staged for 280,000 participants, averaging 5 performances per day (Karlyn and Monjane 1998).

The Targeted Radio Campaign

On World AIDS Day, December 1 1996, PSI launched the '*So A Vida Oferece Flores*' (Only Life offers Flowers) national radio campaign using nine spots in Portuguese. The spots were designed to reinforce key messages from the PSI flagship play of the same name using the same personalities, music, and themes. This '*education-entertainment'* approach mirrors similar initiatives in Africa and elsewhere (Piotrow, Rimon, Winnard, Kincaid, Huntington and Convisser 1990; Valente, Kim, Lettenmaier and Glass 1994; Yoder, Hornik and Chirwa 1996).

[1] JeitO can be translated as skill, style, ability, or flair.

Based on the positive public reaction to the Portuguese language campaign, PSI translated the spots into 10 of the most commonly spoken languages in Mozambique. The local language versions of the spots were launched in November 1997. Between December 1996 and June 1998, the spots were aired in local languages as well as Portuguese over 10,000 times (Monjane and Karlyn 1998).

The spots used separate prevention messages to target youth between the ages of 13 and 20 and adults 21 to 49 years of age (see Figure 1). The development of the radio campaign was based on several assumptions. Firstly, the target groups used were sufficiently discreet and specific. Secondly, the programming of the spots could be directed to the identified target groups. Thirdly, the translation of the spots into local languages would increase recall and impact among the specific target groups.

Figure 1 about here

The national broadcaster, Radio Mozambique (RM), was used to transmit the spots in Portuguese nationwide. While coverage is limited in many areas, RM reaches nearly 100% of urban and peri-urban populations. In addition, each of the 10 provincial capitals has a provincial RM radio station that broadcasts in Portuguese as well as the predominant local language(s). The Tete provincial radio station was out of commission during much of the campaign, however the province was partially covered by both RM national broadcasts and neighboring RM Manica.

DATA AND METHODS

To evaluate the targeted radio campaign, PSI sought to measure the overall coverage attained through the spots, the general recall rate, the message retention per target group, and the behavioral impact of the campaign on the groups targeted. The data collection was carried out over a period of two weeks in June 1998. The interviews were based on a sample of individuals considered to be at higher risk of acquiring STIs or HIV/AIDS. Such individuals included in-school youth, out-of-school youth, and adults found in locations associated with risk behaviors including venues for commercial sex (night clubs, bars, kiosks) and areas of high mobility (truck stops, police/military posts). Only individuals within these categories between the ages of 13-49 years were interviewed. The study was undertaken in 75 urban and peri-urban health districts.

A two-stage, random sample was undertaken. The first stage employed a self-weighted selection of clusters using probability of selection proportional to the population size. The second stage listed those present at a selected location over a fixed period of time. A random number table was used to select a predetermined number of interviews per target group from the list. A total of 10 respondents were interviewed per cluster, 3 youth in-school, 2 youth out-of-school, and 5 interviews with high-risk adults. A total of 754 interviews were undertaken, of which 18.7% (141) were young females, 22.1% (167) young men, 17.8% (134) adult women and 41.4% (312) adult men. No additional weights were applied to the data.

PSI staff supervised the sample selection and interviews, which were carried out by community activists associated with the project. Both groups of individuals participated in a weeklong training course prior to the survey. The data were cleaned and verified in the field at the provincial level and sent to PSI's central office in Maputo for review, data entry, and analysis. Bi-variate analysis of the data was carried out using the chi-squared test and considered significant at the p-level of 0.05 unless otherwise noted.

Dependent variables

Those who criticize the use of mass media for behavior change cite the limitations in attributing individual behavior to a specific campaign (Myhre and Flora 2000: 39). As an alternative approach, this study sought to measure self-efficacy as an intermediate indicator of behavior change (Bandura 1977). For the purpose of this paper, self-efficacy is defined as intent to carry out a behavior after exposure to one or more elements of the campaign. To construct an indicator of self-efficacy, the study asked respondents whether the radio campaign affected their intent, actions, and results of any actions taken after exposure to the radio campaign. Specifically we asked "after hearing the radio program, did you intend to change your behavior?"; "if so, did you actually try to change your behavior?"; and finally, "did you succeed in changing your behavior?"

Exposure to radio programming is the principal indicator used to measure the utility of radio as a mass media instrument. To determine message recall of the radio campaign, a series of probing, open-ended questions were asked of the respondents who had heard the PSI spots. Recall of specific spots was determined by citing the names of the characters in each

advertisement and the principal message transmitted. Each respondent was given an opportunity to identify several spots and their corresponding message.

Methods

In order to attribute the observed change in risk behavior either to the radio campaign or the cumulative effect of exposure to prevention messages over time, a multivariate regression model was run using multiple classification analysis (MCA). The MCA presents the findings in terms of adjusted percentages, after controlling for other factors. The dependent variables tested separately using the model include the three behavioral outcomes of 'intent of', 'attempt to', and 'success in' changing one's sexual behavior. The control variables include socio-demographics and program exposure.[2] For an example of a similar analysis see (Agha, Karlyn and Meekers 2001 -- forthcoming).

Limitations

The data are presented at the provincial level and disaggregated by target group as appropriate. Civil status was not determined directly by the survey instrument. Partner status was defined as either having a regular partner (married or having a sexual relationship lasting one year or more) and non-regular partner (a non-marital relationships of less than one year) (WHO/GPA 1994). Further details and observations regarding the design or implementation of the survey can be found in the baseline survey report (Monjane and Karlyn 1998). Several limitations should be noted in examining the various components of behavior change. As noted by Kane, Gueye et al. (1998: 316), making causal inferences based on exposure and self-reported behavior is problematic and may reflect a 'social desirability' bias on the part of the respondent or pre-existing perceptions of risk on the part of the respondent. Measurement of behavior change is also hampered by the cross-sectional design of the study (Cleland and Ferry 1995).

[2] Dependent variables include intent, attempt, and success in changing sexual behavior. Independent variables include gender, age, education, speaks Portuguese, radio exposure, alcohol consumption, occasional partner, number of sources of exposure to PSI communications, heard radio campaign, recall campaign message.

RESULTS

Profile of Respondents

As would be expected from an urban sample, respondents reported a relatively high level of educational attainment -- 81.9% reported attaining any secondary schooling or higher (see Table 1). Virtually all respondents spoke Portuguese as their first or second language (93.8%), and half spoke Portuguese as their first language (45.2%). Fewer adult women registered fluency in Portuguese (88.8%).

Table 1 about here

Nearly half of adult men (47.4%) reported a non-regular partner in addition to a regular partner. Fewer adult women reported both a regular and non-regular partner (20.1%). In contrast, youth reported higher frequencies of only non-regular partners. A total of 28.4% of female youth reported a non-regular partner and 26.3% of young men reported a non-regular partner. 19.4% of adult women reported having a non-regular partner only, and even less (9.6%) for adult men. Youth were more likely to report no partner, with 46.1% of young men and 33.3% of young women reporting neither a regular or non-regular partner in the past year. For adults, only 5.2% of women and 4.8% of men reported no partner. These patterns of sexual behavior are consistent with previous studies in Mozambique and the region (Cleland and Ferry 1995; Karlyn and Monjane 1998; UNAIDS 1998a; UNAIDS 1998b; Agha, Karlyn and Meekers 2001 -- forthcoming).

Radio Exposure

A total of 62.9% of respondents listened to the radio in the week prior to the survey (see Table 2). Adult men reported the highest exposure to the radio in the past week (69.6%), followed by young females (62.4%), young males (58.1%) and adult women (53.7%). Exposure to radio is positively associated with level of class attainment, and some variation was noted by province.

Table 2 about here

Spot and Message Recall

Of the 754 respondents surveyed, 52.4% heard the radio campaign. Of those not exposed to the campaign, over half had not heard the radio at all during the month prior to the study. Adult men were more likely to have heard the campaign (62.5%) than female adults (37.3%). Respondents in Cabo Delgado (64.7%) and Sofala (64%) provinces registered the highest exposure to the campaign while Tete (38.3%) and Nampula (36.4%) the lowest.

Recall of one or more specific messages of the radio campaign was reported by 45.5% of those interviewed. Just over half of all men interviewed recalled message details, while slightly more than a third of women could do so (not shown). By target group, this corresponded to recall by 55.4% of male adults and 41.3% of male youth. Female adults registered lower recall (35.1%) than female youth (38.3%). By province, the lowest recall was found in Nampula province where only 29% of respondents could identify at least one campaign element.

Further probing in the interview demonstrated the limited grasp over the content of the messages by most respondents. Only 32.4% of men and 24.4% of women were able to identify one or more prevention issues raised in the radio campaign (not shown). Respondents fared even worse in citing key prevention messages: 29.6% of men and 23.6% of women were able to repeat key messages contained in the campaign (not shown). Male adults were more capable of citing details of the campaign than the others. However, substantial variation was found by province, notably Cabo Delgado (60.3%), Sofala (48%), and Niassa (47.5%) where recall of issues was dramatically higher than other provinces. Recall of campaign messages was similarly high in these three provinces. Finally, recall of issues and messages shows a strong positive correlation with level of education ($p< 0.05$).

The programmatic objective of targeting specific spots to specific groups met with limited success. For example, spot 6 was the most popular spot across target groups and pre-tested well, but only 16.4% could recall its details. Directed toward adult women to promote inter-partner communication and condom use in marital relationships, spot 6 suggested that a wife could successfully negotiate condom use with her husband. Instead of appealing to the intended target group of adult women, the spot was much more popular with adult men. A total of 21.8% of adult men could identify Spot 6 in detail, while only 13.4% of adult women could do so (not shown).

Exposure to PSI Program Communications

Exposure to the JeitO brand was nearly universal with 94% of respondents having heard of JeitO[3]. A considerable proportion (41.2%) knew of JeitO but was not exposed to the radio campaign. Exposure to IPC activities was quite high. Over half of respondents (53.2%) reported theater as a source of knowledge about JeitO, while 65.9% reported participating in PSI's peer debates. Radio as a source of information about JeitO was cited by 64% of respondents. Female adults reported the least exposure to any communications means as well as being more likely to have no exposure at all. Adult males registered higher exposure to each communication channel.

As presented in Table 2, few respondents (11%) reported no exposure to any one of the project's three principal communications activities. Nearly one-third (29.4%) were exposed to only one activity and 59.5% were exposed to two or more types of communications activities. By target group, adult males reported the highest rate of exposure to communications activities overall. Exposure to PSI communications increases with level of educational attainment. By province, Zambézia registered the highest exposure, while Nampula the lowest.

Intent and Action Taken

Table 3 examines the influence of exposure to communication sources on behavior change. Exposure to the radio campaign without detailed recall had no significant effect on intent to change behavior or actual actions taken by respondents. In fact, listening to the radio once or more per week appears to have a stronger impact on respondent behavior than having heard the radio campaign (see Table 3). Frequent radio listeners (once or more per week) reported higher intent to change their behavior as a result of the risk of HIV/AIDS than less frequent radio listeners -- 85.4% v. 71.4% ($p < 0.001$, OR 2.36). Attempt to change behavior is likewise higher among frequent listeners (76.4% v. 65%, $p < 0.001$, OR 1.74) and reported success in changing behavior is significantly higher for frequent listeners as well (74.7% v. 62.5%, $p < 0.001$, OR 1.77).

Recall of detailed radio messages had a strong effect on intent, attempt, and success in carrying out behavior change. Of those with detailed recall, 95.3% intended to initiate behavior change, compared with 67.6% of those without detailed recall ($p < 0.001$, OR 9.78). In addition,

[3] Data on exposure to channels not shown in any table

85.4% of those recalling specific messages attempted to change their behavior compared with 61.1% of those without the same recall detail ($p < 0.001$, OR 3.74). Finally, success in carrying out behavior change was reported by 83.4% of those with detailed recall versus only 59.1% among those without detailed recall ($p < 0.001$, OR 3.47).

The combined effect of exposure to several PSI communications (peer education debate, theater and any radio) activities also shows a significant positive relationship with behavior change outcomes. Respondents exposed to two or more communications activities reported higher intent (87.1%), attempt (79.3%), and success (77.3%) in behavior change as compared to those exposed to only one or fewer interventions ($p < 0.001$).

Table 3 about here

Multivariate Model

A multi-variate model was constructed to demonstrate the effect of campaign message recall on intent to change one's sexual behavior in response to the threat of STIs and HIV/AIDS (see Table 4). The effect of recall on intent was to raise individual intent to 97.2% compared to 62.8% for those not exposed to the radio campaign ($p < 0.001$), after controlling for other factors. Among those who recall the campaign message, 86.1% attempted to change their behavior compared 58.0% of those with no message recall ($p < 0.001$). Finally, self-reported success in changing behavior is significantly higher among those with message recall (83.8%) as compared to those without (56.8%) ($p < 0.001$).

Table 4 about here

The effect of the radio campaign cannot be attributed to socio-demographic differences or exposure to PSI communications, since the effect remains significant after controls. Additional characteristics significantly associated with self-efficacy include age, education, and exposure to the radio.

DISCUSSION

Radio is the most common source of information for the majority of Mozambicans in terms of accessibility and coverage. This is particularly true of those considered to be at risk of contracting HIV/AIDS – urban, relatively wealthy and better educated. To a certain degree, the radio campaign promoted by PSI/Mozambique succeeded in reaching these individuals through a targeted approach. Recall of both general and specific messages transmitted by the campaign was relatively high across groups. However, the strategy of targeting each group with a tailored message did not result in higher recall of those messages. All groups were exposed to several targeted messages, including those not targeted at them. Even though the targeting of specific messages to specific groups was not effective, exposure to the radio campaign appears to have changed behavior.

Several reasons may be offered to explain the relatively low recall of detailed prevention messages. Coverage was hampered by implementation problems such as non-compliance on the part of the radio stations to play a spot during agreed upon time slots, power outages, and other technical problems. Furthermore, the groups targeted by the campaign may have been too large and indistinguishable, thus even perfect placement would have had limited success. Alternatively, the strategy of airing all 9 spots simultaneously with different but similar messages, may have resulted in one spot 'stepping on' another and left many in the intended audience with no clear message.

In terms of effectiveness of the campaign to influence individual self-efficacy, the multivariate model presented indicates that message recall had a significant positive impact on the target audience in terms of self-reported intent, attempt, and success in changing behavior. Based on the fact that the campaign stimulated reflection among the target population to adopt preventive practices as well as to anticipate what that change would entail, the radio campaign may be considered a qualified success.

BIBLIOGRAPHY

Agha, S., A. Karlyn and D. Meekers (2001 -- forthcoming). "The promotion of condom use in non-regular partnerships in urban Mozambique." Health Policy and Planning 16(2).

Bandura, A. (1977). Social Learning Theory. Englewood Cliffs, NJ, Prentice-Hall.

Cleland, J. and B. Ferry, Eds. (1995). Sexual Behavior and AIDS in the Developing World. Social Aspects of AIDS. London, Taylor & Francis.

Dahl, D.W., G.J. Gorn and C.B. Weinberg (1997). Marketing, Safer Sex, and Condom Acquisition. Social Marketing: Theoretical and Practical Perspectives. M.E. Goldberg, M. Fishbein and S.E. Middlestadt. Mahwah, New Jersey, Lawrence Erlbaum Associates: 169-89.

Davis, C. (1997). Communication and Marketing for AIDS Prevention. Maputo, MZ, Population Services International.

Hanson, K., L. Kumaranayake and I. Thomas (1998). Supplying subsidised contraceptives: economic rationale and programme issues for promoting sustainability. London, London School of Hygiene and Tropical Medicine.

Kane, T.T., M. Gueye, I. Speizer, S. Pacque-Margolis and D. Baron (1998). "The Impact of a Family Planning Multimedia Campaign in Bamako, Mali." Studies in Family Planning 29(3): 309-23.

Karlyn, A. and P. Monjane (1998). National AIDS Prevention Survey (NAPS) of Mozambican Sexual Behaviors and Condom Use - Final Report. Maputo, MZ, Population Services International in Mozambique, Mozambique Ministry of Health National AIDS Control Program (PNC DTS/SIDA).

Melkote, S.R., S.R. Muppidi and D. Goswami (2000). "Social and Economic Factors in an Integrated Behavioural and Societal Approach to Communications in HIV/AIDS." Journal of Health Communication 5(Suppl): 17-28.

Monjane, P. and A. Karlyn (1998). Avaliação Rápida de Media: Uma Avaliação da Campanha de Comunicação de Rádio [Rapid Media Evaluation: An Evaluation of a Radio Communication Campaign]. Maputo, Population Services International in Mozambique.

Myhre, S.L. and J.A. Flora (2000). "HIV/AIDS Communication Campaigns: Progress and Prospects." Journal of Health Communication 5(Suppl): 29-45.

Novelli, W.D. (1990). Applying Social Marketing to Health Promotion and Disease Prevention. Health Behavior and Health Education: Theory, Research and Practice. K. Glanz, F.M. Lewis and B. Rimmer. San Francisco, Jossey-Bass Publishers: 342-69.

Piotrow, P., J.G.I. Rimon, K. Winnard, D.L. Kincaid, D. Huntington and J. Convisser (1990). "Mass media family planning promotion in three Nigerian cities." Studies in Family Planning 21(5): 265-374.

UNAIDS (1998a). UNAIDS Epidemiological Fact Sheet: AIDS in Africa, United Nations Joint Programme on HIV/AIDS, Geneva. 1998.

UNAIDS (1998b). UNAIDS Epidemiological Fact Sheet: Mozambique, United Nations Joint Programme on HIV/AIDS, Geneva. 1998.

Valente, T.W., M.Y. Kim, C. Lettenmaier and W. Glass (1994). “Radio promotion of family planning in the Gambia.” International Family Planning Perspectives 20(3): 96-104.

Valente, T.W., P.R. Poppe, M.E. Alva, R.V. de Briceno and D. Cases (1995). “Street Theater as a Tool to Reduce Family Planning Misinformation.” Quarterly of Community Health Education 15(3): 279-89.

WHO/GPA (1994). Evaluating National AIDS Control Programmes. Geneva, World Health Organization.

World Bank (1997). Confronting AIDS: Public priorities in a global epidemic. New York, Oxford University Press.

Yoder, P.S., R. Hornik and B.C. Chirwa (1996). “Evaluating the program effects of a radio drama about AIDS in Zambia.” Studies in Family Planning 27(4): 188-203.

Figure 1: Summary of radio campaign by spot, target group, personality, key words and principal message

Spot	Target Group	Personalities	Key Words Identifiers	Principal Message
1	Young Males	Rappers	Rap music	JeitO is not bad or prejudicial. 'Malta' [homey], let's be responsible, use a condom.
2	Young Males	Zé and friend	Zé, where did you go last night?	It was a great scene. Carlitos is really bad [sick]with AIDS. Condoms prevent STDs, AIDS and unwanted pregnancy.
3	Young Females	Guida and friend	Hi Guida, I'm a bit worried about Carla	Practice safe sex or delay first sexual activity.
4	Adult Females	Marta and Aunt	Marta, it's been a long time since I've seen you. Why are you so sad?	Men, use a condom if you have an outside sexual relation, don't put your wife at risk.
5	Adult Females	Marta and Olga	Marta makes favorite dish for husband.	He's a lucky man. Women should convince their partner to use a condom with outside partners.
6	Adult Females	Osvaldo and Marta	Osvaldo arrives home early.	He's preoccupied. Negotiate condom use in a permanent relationships
7	Adult Males	Osvaldo and doctor	Doctor counsels patient (Osvaldo).	AIDS is for real (not a story). Condoms protect if used correctly and consistently
8	Adult Males	Osvaldo and Chico	Osvaldo is very angry.	Women are crazy, they only want men who use condoms. Use a condom to protect you and your partner.
9	Adult Males	Osvaldo and Alice	Osvaldo declares his love for Alice.	A person who appears healthy can be infected with HIV/AIDS. Condoms protect.

Table 1 -Percent of respondents by target group and education, partner status, language, and province

	Youth		Adult		
	Female %	Male %	Female %	Male %	Total %
Education					
Not specified	1.4	0.6	6.7	2.9	2.8
Less than secondary	14.2	8.4	21.6	16.7	15.3
Any secondary	83.7	87.4	63.4	64.4	72.9
Higher than secondary	0.7	3.6	8.2	16.0	9.0
Partner type					
Not Specified	0.7	1.2	3.0	1.0	1.3
Regular Partner	29.8	15.6	52.2	37.2	33.7
Regular & Non-Regular	7.8	10.8	20.1	47.4	27.1
Non-Regular Partner	28.4	26.3	19.4	9.6	18.6
No Partner	33.3	46.1	5.2	4.8	19.4
First language					
Portuguese	46.1	55.1	36.6	43.3	45.2
Local Language	53.9	44.9	63.4	56.4	54.6
Secondary language					
Not Specified	1.4	1.8	3.7	1.0	1.7
Portuguese	48.2	42.5	53.0	51.9	49.3
Local Language	50.4	55.7	43.3	47.1	48.9
Province					
Maputo	9.9	13.8	18.7	15.4	14.6
Sofala	12.8	13.2	11.2	14.4	13.3
Manica	15.6	10.8	9	12.2	11.9
Tete	7.8	8.4	7.5	8	8
Gaza	3.5	4.2	7.5	5.8	5.3
Inhambane	9.9	7.8	9.7	9.3	9.2
Zambezia	12.8	12.6	6.7	7.1	9.3
Niassa	2.8	3.6	6.7	6.7	5.3
Nampula	14.2	18	15.7	11.5	14.2
Cabo Delgado	10.6	7.8	7.5	9.6	9
Total	100.0	100.0	100.0	100.0	100.0
	141	**167**	**134**	**312**	**754**

Table 2: Level of exposure and recall of the publicity campaign by target group, education and province

	Heard Radio[†] %	Heard Radio Campaign[§] %	Recall Radio Message* %	No. of PSI Communications Exposed To[¶] none %	1 %	2+ %	Total N	Total %
Target Group								
Female youth	62.4	48.9	38.3	8.5	38.3	53.2	141	100
Male youth	58.1	48.5	41.3	11.4	26.9	61.7	167	100
Female adult	53.7	37.3	35.1	19.4	28.4	52.2	134	100
Male adult	69.6	62.5	55.4	8.3	27.2	64.4	312	100
Education								
Not specified	38.1	19.0	19.0	19.0	61.9	19.0	21	100
Primary	47.8	32.2	24.3	21.7	40.9	37.4	115	100
Secondary	65.1	56.0	48.5	8.9	26.9	64.2	550	100
Tertiary	77.9	67.6	64.7	7.4	20.6	72.1	68	100
Province								
Maputo	67.3	62.7	54.5	3.6	28.2	68.2	110	100
Sofala	74.0	64.0	57.0	6.0	25.0	69.0	100	100
Manica	52.2	45.6	42.2	12.2	28.9	58.9	90	100
Tete	63.3	38.3	35.0	10.0	28.3	61.7	60	100
Gaza	65.0	62.5	52.5	10.0	40.0	50.0	40	100
Inhambane	60.9	46.4	39.1	14.5	37.7	47.8	69	100
Zambezia	54.3	50.0	34.3	7.1	14.3	78.6	70	100
Niassa	72.5	57.5	50.0	2.5	27.5	70.0	40	100
Nampula	56.1	36.4	29.0	26.2	39.3	34.6	107	100
Cabo Delgado	67.6	64.7	64.7	11.8	26.5	61.8	68	100
Total								
%	62.9	52.4	45.5	11.0	29.4	59.5	754	100

[†] Heard the radio in the past week

[§] Can identify one or more elements of the radio campaign

* Can recall a specific message from the radio campaign

[¶] Exposure to PSI media elements, including peer education, theater, television or radio

Table 3: Intent, Attempt and Success in Changing Behavior by Indicators of Exposure to Communications

	Behavior Change Outcomes		
	Intent	**Attempt**	**Success**
	%	**%**	**%**
Listened to Radio in Past Week			
No	71.4	65.0	62.5
Yes	85.4	76.4	74.7
p level	< 0.001	< 0.001	< 0.001
Heard Radio Campaign			
No	77.4	69.9	67.7
Yes	82.8	74.2	72.4
p level	not sig	not sig	not sig
Recall Message(s)			
No	67.6	61.1	59.1
Yes	95.3	85.4	83.4
p level	< 0.001	< 0.001	< 0.001
Number of Sources of PSI Communications Exposed to			
none	37.3	30.1	27.7
1	82.4	73.4	71.6
2+	87.1	79.3	77.3
p level	< 0.001	< 0.001	< 0.001
Total	80.2	72.1	70.2
N	754	754	754

Table 4: Intent to change behavior adjusted for socio-demographic, mass media, and campaign factors

		Intent			Attempt			Success	
	N	Unadj.	Adj.		Unadj.	Adj.		Unadj.	Adj.	
Gender										
Female	175	84.0	84.9		75.4	76.8		74.9	76.5	
Male	332	84.3	83.8		75.3	74.6		72.9	72.0	
Age							**			**
13-18	168	80.4	81.0		66.7	66.5		66.7	65.9	
19-24	132	85.6	86.5		79.5	80.9		76.5	78.0	
25-30	115	87.8	87.1		84.3	84.0		83.5	83.3	
31-36	58	86.2	84.2		77.6	76.0		74.1	73.1	
37-42	25	84.0	83.4		76.0	75.5		68.0	68.2	
43-49	9	77.8	76.4		44.4	44.9		44.4	46.2	
Education										**
Less than secondary	60	81.7	80.3		65.0	62.5		56.7	55.2	
Any secondary	392	84.7	85.2		76.0	77.0		75.0	75.7	
Higher than secondary	55	83.6	81.6		81.8	77.4		81.8	78.6	
Speaks Portuguese										
No	22	86.4	85.2		72.7	76.2		63.6	69.8	
Yes	485	84.1	84.2		75.5	75.3		74.0	73.7	
Radio Exposure				**			*			*
Infrequent	67	71.6	71.5		64.2	64.1		62.7	62.4	
Frequent	440	86.1	86.2		77.0	77.0		75.2	75.3	
Alcohol Consumption										
Infrequent	342	82.5	83.1		73.4	74.7		72.5	73.3	
Frequent	165	87.9	86.6		79.4	76.8		75.8	74.1	
Occasional Partner										
No	270	82.6	83.0		74.1	74.7		72.6	72.8	
Yes	237	86.1	85.7		76.8	76.0		74.7	74.5	
Exposure to PSI Communications										
Low	129	78.3	79.3		66.7	69.0		65.1	67.8	
High	378	86.2	85.9		78.3	77.5		76.5	75.5	
Recall Radio Campaign Message				***			***			***
No	198	66.2	62.8		58.6	58.0		57.1	56.8	
Yes	330	95.2	97.2		85.8	86.1		83.6	83.8	
Grand Mean			80.2			72.1			70.2	
Multiple R^2			0.182			0.136			0.133	

Significance of F – * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Unadj. = unadjusted, Adj. = Adjusted