

WJ Brown  
S Kiruswa  
BP Fraser

## Promoting HIV/AIDS Prevention through Soap Operas: Tanzania's Experience with *Maisha*

### *ABSTRACT*

In the past three decades television soap operas have been used as a means of health education and persuasion. In recent years, the proliferation of entertainment television worldwide has made the soap opera a powerful source of educational and social messages. One of the most critical global health issues of today is the need to reduce HIV/AIDS infection, particularly on the continent of Africa. In the 1990s, the country of Tanzania broadcast a highly effective radio soap opera to promote HIV/AIDS prevention. In 2000, Tanzania again employed the use of the soap opera to address HIV/AIDS as well as other social issues, this time through television. Our research indicates that the Tanzanian television soap opera employed in this effort, *Maisha*, effectively promoted HIV/AIDS prevention among television viewers. In particular, those who were more involved with Mashaka, the star of *Maisha*, were more powerfully influenced by the health messages communicated through the programme. The implications of this research for using entertainment for HIV/AIDS prevention are discussed.

---

*William J. Brown is a professor, Steven Kiruswa, a doctoral student and Benson P. Fraser an associated professor at the School of Communication and The Arts at Regent University, Virginia Beach.*

## 1. PROMOTING HIV/AIDS PREVENTION THROUGH SOAP OPERAS: TANZANIA'S EXPERIENCE WITH MAISHA

Among the most critical health issues of the 21<sup>st</sup> century is the need to reduce the spread of HIV/AIDS, which has become the number one cause of death in many central African nations. By the end of 2002, the worldwide cases of people living with HIV/AIDS was estimated to be 42 million people (UNAIDS, 2002). Some 3.2 million adults died of AIDS in 2002, leaving millions of orphaned children, most of them living in Africa. Central Africa is especially at risk, where more than 10 per cent of the population in the 15-49-year-old age group is HIV infected (UNAIDS, 2000). By 2010, more than 40 million children will have lost one or both parents to AIDS (CIDA, 2000). Peter Piot, the Executive Director of UNAIDS, reported at the 13<sup>th</sup> International AIDS conference in South Africa that it will take \$3 billion per year to fight the AIDS epidemic in Africa alone (CNN.com, 2000). The economic effect in Africa could be devastating if AIDS continues to increase among professionals (De Wet, 2001).

While policy planners and health educators desperately seek effective ways of promoting HIV/AIDS prevention, there is growing evidence that entertainment media may play an important role in slowing this epidemic. The extensive reach of entertainment media and the growth of entertainment programming content have overshadowed traditional educational programmes, even in countries where the media were introduced primarily as educational tools to promote national development. For example, when television was introduced in India in 1959, it was regarded as an educational medium to advance the government's development goals. Although the Indian government today still produces educational television programming, by the 1990s entertainment programming had become the dominant content of Indian television, which is now commercialized nationwide (Singhal & Rogers, 2002).

What took place in India has also taken place in many developing nations. Entertainment media is now a dominant form of social influence throughout the world, rivalling traditional influence structures such as the family, the church and other religious, educational and community organizations. Therefore, it has been in the interest of national governments to help meet people's educational, health and development needs through this powerful form of social influence.

## 2. DRAMATIC SERIALS FOR HEALTH PROMOTION

The notion that serial dramas can be powerful sources of social influence dates back to the experiences many countries have had with radio serial dramas. Soap operas have a long history of usage for health education. In 1951, the BBC began broadcasting a

radio drama called *The Archers* to promote agricultural innovation. The series also helped farmers deal with common sanitation and health issues on farms (Singhal & Rogers, 1999:22). The programme, still on the air, is the longest running soap opera in history. Elaine Perkins pioneered the use of radio soap operas for development in Jamaica in the late 1950s. Her work spanned four decades, enabling her to promote mosquito control, self-sufficiency and self-determination, sexual responsibility and family planning through the entertaining soap opera characters she created. Research on radio soap operas in Costa Rica (Risopatron & Spain, 1980), Kenya (Mazrui & Kitsao, 1998) and India (Sood, Law, & Singhal, 1998) indicates that even sensitive health issues such as family planning, sexual responsibility and the status of women can be addressed effectively through soap operas.

The use of television soap operas for education and development was pioneered by Miguel Sabido in Mexico in the 1970s. Sabido, who was the then Vice-President of Research for Television, produced a series of *telenovelas* from 1975 to 1986 to address multiple social and development needs, including many health beliefs and behaviours (Brown, Singhal & Rogers, 1989; Sabido, 1989). Five of these television series promoted family planning beliefs and practices. During this period, the birth rate in Mexico decreased by 34 per cent (Ryerson, 2000). Through the persistence of David Poindexter, the former director of Populations Communications International, Sabido collaborated with Indian writers, producers and social scientists to help India develop its first long-running television soap opera, *Hum Log* (We People). *Hum Log*'s tremendous commercial success and modest promotion of women's status and other prosocial beliefs paved the way for other commercial soap operas with educational goals (Singhal & Rogers, 2001:88). One such television soap opera that followed *Hum Log* in India was *Hum Raahi* (Co-travellers), which promoted the status of women and smaller family-size norms.

The experiences of development planners and educators with radio and television soap operas have created a network of media professionals, academics and non-profit agency development specialists who now gather on a regular basis to learn about the use of entertainment for education and development. The purposeful use of entertainment in order to increase awareness or knowledge about an educational issue to create favourable attitudes, and reinforce or change values and corresponding behaviour, is referred to by communication scholars as the entertainment education strategy (Singhal & Rogers, 1999:8-9). Research of entertainment-education (EE) programmes has been published in academic journals and conference proceedings (see Coleman & Meyer, 1989; Johns Hopkins University, 1997; Jacoby & Fokkens, 2001). In the past two decades, large development agencies such as USAID, UNAIDS, the Ford Foundation, and the Rockefeller Foundation have funded numerous entertainment education projects throughout the world. The Center for Disease Control in Atlanta is keenly interested in the use of entertainment to reduce the spread of sexually transmitted diseases (Salmon, 2000).

### 3. ENTERTAINMENT EDUCATION MEDIA IN AFRICA

In the past two decades, there have been dozens of entertainment education media projects implemented throughout the continent of Africa. We will review some of the most important EE efforts through the mediums of radio, television and film.

#### 3.1 EE Radio in Africa

In 1993, Miguel Sabido hosted a workshop in Mexico on developing entertainment education soap operas. During the workshop, plans were developed to create a radio soap opera and a television soap opera in Kenya (Singhal & Rogers, 1999:229). The radio soap opera, *Ushikwapo Shikamana (Hold on to He Who Holds on to You)*, was broadcast from 1987 to 1989, and reached 7 million people, about 40 per cent of the population of Kenya in 1987 (Mazrui & Kitsao, 1988). By 1989, the series was reaching 60 per cent of the population, a projected 75 per cent of whom reported that they understood the family planning messages (Singhal & Rogers, 1999:130-131). Several other health-related themes were addressed by the serial, including the benefits of smaller family sizes, husband and wife communication and respect, and the disadvantages of polygamy.

From 1993 to 1997, Tanzania began producing radio soap opera to address the AIDS epidemic. Two days a week in the evening hours, the government broadcast *Twende na Wakati (Let's go with the Times)*, which was listened to by 55 per cent of the population (Singhal & Rogers, 1999:134). Rogers et al. (1997, 1998) reported that 82 per cent of the listeners of the programme adopted a method of HIV prevention and 23 per cent adopted one or more family planning methods. During the same period, there was a 153 per cent increase in condom distribution in the country.

Three other African nations produced and broadcast EE radio programmes in the 1990s to address critical health needs. Zambia produced a radio drama designed to promote HIV/AIDS prevention. Valente (1997) reported that the serial increased knowledge and concern about HIV/AIDS, and persuaded Zambians to decrease their average number of sexual partners. Then Gambia also broadcast a radio drama to address sexual responsibility issues. The 39-episode series, called *Fakube Jarra (Wise Man)*, persuaded a reported 35 per cent of its listeners to adopt family planning methods during the year in which it was broadcast, a 16 per cent increase from the previous year (Valente, et al., 1994).

The *Soul City* radio dramas were launched in South Africa in 1994 as a part of a long-term multimedia campaign that uses multiple forms of entertainment media to disseminate health education and persuade people to adopt beneficial health practices, including television, radio, newspapers, comics, music and drama (Japhet, 1999).

Pioneered by Dr Garth Japhet, a medical doctor, the *Soul City* enterprise is one of the most influential centres for EE media in the world. The non-profit organization by the same name receives support from a number of development organizations, including the Education Ministry in South Africa, UNICEF, UNESCO, Japan and the EU (The Courier ACP- EU, 2002). *Soul City* radio dramas have been highly successful in addressing a number of critical health needs in South Africa, including HIV/AIDS prevention (Soul City, 2000, 2001).

Several other non-profit organizations and governments have recently launched EE radio dramas to promote sexual responsibility and curtail the spread of sexually transmitted diseases. These programmes include *Urunama* in Rwanda (see [www.healthunlimited.org](http://www.healthunlimited.org)), *Tembea Na Majira* (see [www.mediae.org](http://www.mediae.org)) in Kenya, *Nshilakamona (I have not seen it)* in Zambia (Salmon, 2003), *Mopani Junction* in Zimbabwe (Salmon, 2003), and two series in Ethiopia: *Yeken Kignit (Looking over one's Daily Life)* and *Dhimbiba (Getting the Best out of Life)* (One World US, 2003).

Based on the early success of *Twende na Wakati* in promoting HIV/AIDS prevention practices, Tanzania launched a new radio soap opera called *Mkwaju (Walking Stick)*. Like its predecessor, *Mkwaju* features the life of a truck driver and his battles with sexual responsibility and HIV, the programme has achieved great national popularity and according to one study, it has persuaded three-quarters of its regular listeners to change their sexual practices (Sawyer, 2002). Kenya has also launched a new radio series called *Ushikwapo Shikamana (If Assisted, Assist Yourself)*. The programme reaches an estimated 14.5 million listeners with HIV/AIDS prevention themes (Planetwire.org, 2002).

Although radio will continue to be the dominant means of reaching large populations in Africa with educational and development messages, the use of entertainment education on television is rapidly growing. In the next section, we will review some of the important television soap operas used to promote sexual responsibility and curtail the spread of HIV/AIDS.

### 3.2 EE Television in Africa

Nigeria was one of the first countries in Africa to use the entertainment education strategy on television. From 1986 to 1987, Nigeria broadcast 39 episodes of *In a Lighter Mood*, a serial drama designed to promote family planning practices. Viewers were encouraged to write in their questions and comments in response to the programmes. Research conducted in the Enugu region of Nigeria indicated a sharp increase in visits to a regional family planning clinic, where an average of 55% of the new clients said that *In a Lighter Mood* was their source of referral to the clinic (Piotrow, et al., 1990).

In the late 1980s, Kenya began broadcasting *Tushauriane (Let's Discuss)*, its first long-running television soap opera. The programme achieved high audience ratings and was frequently discussed by Kenya's print media (Andere, 1987; Muchiri, 1989; Muroki, 1989; Odindo, 1987). Although no summative evaluation of *Tushauriane's* influence on issues of sexual responsibility was conducted, the programme's popularity made it a model for other African soap operas.

In 1994, the first *Soul City* television series was broadcast in South Africa. The 13 dramatic episodes broadcast during a three-month period focused on maternal and child health as well as HIV/AIDS prevention. A second series was broadcast in 1996, focusing on HIV/AIDS, TB and smoking prevention; followed by a third series in 1997, which also concentrated on HIV/AIDS prevention messages as well as other health-related themes. All three series achieved high audience ratings, became some of the most popular prime-time television programmes on South African television, and reached an estimated 20 million people (Japhet & Goldstein, 1997).

In 1999, *Soul City* launched its fourth entertainment education television soap opera and Tanzania began planning its first, a programme called *Maisha (That's Life)*. Communication and development professionals in Tanzania were particularly encouraged by their success with the radio soap opera *Twende na Wakati*. Although most of the population of Tanzania is rural, the government wanted to gain experience in using television as had other African nations such as Kenya and South Africa. Television was still in its early developmental stages in Tanzania in 2000, when there were only about four million television sets among the population of 30 million. Only one previous indigenous soap opera had ever been televised by Tanzanian television.

*Maisha* began airing in 2000 and addressed a number of important social issues, most prominently HIV/AIDS, alcoholism and drug abuse (Brown, Fraser & Kiruswa, 2002). Despite massive education efforts, AIDS resulted in the death of 140 000 people in Tanzania in 1999. The writers of *Maisha* targeted the programme to reach an urban audience. Like its predecessor, *Twende na Wakati*, *Maisha* featured a truck driver, a man named Mashaka, as the central character in the series and a negative role model for HIV/AIDS prevention. The series was broadcast on Tanzanian national television for a year.

In 2001 and 2003, the fifth and sixth *Soul City* television series were produced and broadcast in South Africa. Like the first four series, the programmes consistently achieved high audience ratings and won numerous awards for excellence in television drama. Extensive social scientific research indicates the programs have increased knowledge, discussion and adoption of HIV/AIDS prevention practices (Singhal, et al., in press;

Usdin, Christofides, & Malepe, 2000). The non-profit organization, Soul City, has conducted evaluation studies of each television series to document the influence of the programmes on viewers (see ). In addition to promoting sexual responsibility, family planning, HIV/AIDS prevention, drug and alcohol abuse prevention, and other prosocial beliefs and practices in South Africa, Soul City media have been used in neighbouring Botswana, Lesotho, Namibia, Swaziland, Zambia and Zimbabwe.

The success of *Soul City* inspired the KBC national television network in Kenya to produce the dramatic television series *Heart and Soul*. Sponsored by 24 United Nations agencies, *Heart and Soul* was produced through the creative leadership of Matthew Robinson, a veteran BBC director of television soap operas. The programme is intended to reach an estimated 50 million television viewers in 23 English-speaking African nations to address key development issues, including HIV/AIDS prevention (BBC News, 15 August, 2002).

#### 4. ENTERTAINMENT MEDIA, INVOLVEMENT AND HEALTH PROMOTION

There is substantial evidence that demonstrates entertainment media generate intense audience involvement, which can have subsequent effects on health-related behaviours. The concept of involvement is a broad one that describes how audience members relate to individuals depicted in and through the mass media. Rubin (1996) describes involvement as a motivated state of anticipated engagement with media messages in which audience members psychologically process media content.

One assumption fundamental to the concept of involvement is that the media consumers are active media users rather than passive receivers of information. Two types of involvement are identified by Rubin and Perse (1987:1) a motivational state that reflects the attitudes that people bring with them to the communication situation, and (2) the cognitive, affective and behavioural participation induced by the media during media exposure (i.e. becoming emotionally and intellectually involved with a television character while watching a programme).

Research on television effects indicates that television viewers become involved with both television characters and television stars through repeated media exposure (Brown & Cody, 1991; Petty & Cacioppo, 1979; Rubin, Perse, & Powell, 1985; Rubin & Perse, 1987; Shefner-Rogers, Rogers, & Singhal, 1998, Singhal, Obregon, & Rogers, 1994; Turner, 1993). Entertainment television programmes in particular have been effective in generating a high degree of audience involvement, particularly when popular media personalities are created. The high involvement of audiences with popular soap opera characters in Nigeria, Tanzania and South Africa provide substantial evidence of the efficacy of using dramatic serials to induce attitudinal and behavioural changes

(Reynolds, 1999; Singhal & Rogers, 1999; Soul City, 2000). The effects of audience involvement are theoretically explained in the processes of parasocial interaction and identification.

## 5. PARASOCIAL INTERACTION

The emotional and intellectual involvement of media consumers with media personalities such as a television character is explained in part by the parasocial interaction theory. As television viewing rapidly increased in the United States in the 1950s, two psychologists observed the sense of intimacy that television viewers developed with television personalities. They referred to the imaginary relationship between a television viewer and television personalities or "persona" as parasocial relationships and the process of relating to television persona as parasocial interaction (Horton & Wohl, 1956). Repeated exposure to media personalities through the mass media creates a sense of friendship or intimacy in media users (Levy, 1979). Audience members commonly look to media personalities as "friends" and those with whom they feel "comfortable". Evidence of parasocial relationships has been observed between television viewers and newscasters, talk show hosts and soap opera stars (Babb & Brown, 1994; Brown & Fraser, 1993; Levy, 1979; Rubin & McHugh, 1987; Shefner-Rogers, Rogers, & Singhal, 1998, Singhal, Obregon, & Rogers, 1994; Turner, 1993).

Parasocial interaction with media persona can produce measurable effects on audiences. In India, parasocial interaction with the stars of *Hum Log (We People)*, the nation's first television soap opera, promoted the status of women and family harmony in India (Brown & Cody, 1991; Singhal & Rogers, 1999). In Peru, many thousands of television viewers joined literacy programmes through parasocial interaction with the popular soap opera character "Maria" the star of the Peruvian *telenovela Simplemente Maria (Simple Mary)* (Singhal, Obregon & Rogers, 1994).

The public's strong parasocial relationship with US basketball star "Magic" Johnson had a positive impact on HIV prevention, especially among young adults at risk for HIV infection (Brown & Basil, 1995). A parasocial relationship with O.J. Simpson predisposed much of the public to disbelieve evidence linking him to the deaths of his former wife Nicole and Ronald Goldman (Brown, Duane, & Fraser, 1997). Adolescents' parasocial interaction with Will Smith was closely associated with learning from the television programme in which he starred, *Fresh Prince of Bel-Air* (Babb & Brown, 1994). A study of the television programme *Touched by an Angel* indicated those who exhibited stronger parasocial relationships with the three angel characters were more likely to discuss with others the spiritual issues highlighted in the programme (Piper, Keeler & Brown, 1997). These parasocial relationships provide an important means by which media consumers



acquire health-related concerns, beliefs and practices. In the next section, we will provide specific research questions and hypotheses that seek to analyze the effects of *Maisha* in Tanzania through parasocial interaction with the soap opera's main character.

## 6. RESEARCH QUESTIONS AND HYPOTHESES

Several research questions were explored and hypotheses were tested in the present study. First, we decided to investigate to what extent people were exposed to the soap opera *Maisha*. The purpose for pursuing this kind of information was to provide a context for understanding how involvement with Mashaka, the star of *Maisha*, might have influenced people's sentiments towards HIV/AIDS. If very few people were exposed to *Maisha*, then the potential influence of the programme on the public would be limited. If, on the other hand, *Maisha* was well known and a topic of public discussion, then the potential influence would be greater. We also sought to measure the public's awareness and concerns with regard to HIV/AIDS.

## 7. RESEARCH QUESTIONS

The following research questions were posed:

RQ1: To what extent are audience members more concerned about HIV/AIDS through learning about Mashaka's HIV infection?

RQ2: Does exposure to *Maisha* influence the degree to which viewer discuss HIV/AIDS with others, talk to their sexual partner(s) about HIV/AIDS prevention, reduce the number of sexual partners they may have, and discuss the need to take a blood test for HIV infection.

Previous research (Brown, 1991, 1992) indicates that gender may be an important variable in moderating people's responses to HIV/AIDS prevention messages. We therefore posed two additional research questions to explore gender differences:

RQ3: To what extent do men and women differ in their concern about HIV/AIDS, perceptions of risk, discussion of AIDS risk with their sexual partners, and adoption of HIV/AIDS prevention practices?

RQ4: To what extent do men and women differ in their degree of involvement with Mashaka, the star of the soap opera *Maisha*?

Given the important role of education in HIV/AIDS prevention, we explored how formal education may have influenced receptivity to HIV/AIDS prevention messages in the last research question.

RQ5: Is level of education associated with the way in which television viewers responded to the HIV/AIDS prevention messages in *Maisha*?

## 8. HYPOTHESES

Based on the parasocial interaction theory discussed previously, we also formulated specific hypotheses to be tested in the present study. We predicted that exposure to Mashaka on television would create parasocial interaction with him, and that parasocial interaction with Mashaka would lead to specific health awareness, beliefs, concerns and intended practices. The following hypotheses were tested:

- H1: Media exposure to *Maisha* will be associated positively with the development of a parasocial relationship with Mashaka, the star of *Maisha*.
- H2: Parasocial relationship with Mashaka will be associated positively with the adoption of HIV prevention practices.
- H3: Parasocial relationship with Mashaka will be associated positively with communicating honestly to a sexual partner about one's sexual history.
- H4: Parasocial relationship with Mashaka will be associated positively with
  - (a) having a blood test for HIV infection within the past four months; and
  - (b) reducing the number of sexual partners in the past six months.

## 9. METHOD

In order to assess the research questions and test the four hypotheses posed, we designed a survey questionnaire to measure the relevant variables of interest. Although we conducted a number of valuable in-depth interviews with viewers of *Maisha* and with media professionals who helped to create the series, our qualitative data was not sufficient to test our hypotheses. Survey questionnaires have been used in previous studies of audience involvement with television characters and have also been widely used to assess responses to HIV/AIDS prevention messages. The field research approach used in this study has been an effective means to assess audience involvement and the effects of television programming. In the present study, we investigated audience exposure and responses to *Maisha* in two major urban areas of the country, Dar es Salaam and Arusha.

## 10. RESEARCH INSTRUMENT AND SAMPLING PROCEDURES

The survey questionnaire consisted of 57 items, with 8 open-ended questions (seven of these yielded quantitative data and one yielded qualitative data), 30 Likert-scale items (utilizing a 1 to 5 agree-disagree scale), and 19 additional closed-ended questions, including six demographic items. The majority of items yielded interval data, with the next largest number of items providing categorical data. All the data were entered from completed questionnaires into data files for analysis with computer-run statistical programs.

Two composite variables were constructed by creating measurement scales with multiple questionnaire items. Reliability coefficients were then computed for each measurement scale. The decision rule used to determine the usability of these scales was that the Cronbach coefficient alphas had to be .65 or higher for the composite variable to be used for testing the four hypotheses. Both variables met this standard. Correlation analyses yielded the following results: parasocial interaction was measured by ten items, yielding a Cronbach alpha of .89; and the adoption of HIV prevention practices was measured by seven items, yielding a Cronbach alpha of .77. All the other variables were measured by single questionnaire items.

### 10.1 Sample and data collection

A total sample of 505 people completed questionnaires for this study. Five surveys were not completed and were therefore discarded, leaving 500 completed surveys. We decided to collect data in the two major urban areas of the country where television viewing would be most prevalent: Dar es Salaam and Arusha. A stratified random sampling method was employed. One of the authors led a research team of three interviewers to administer the survey in face-to-face interviews by visiting homes and public meeting places in multiple geographic locations in each city. Interviewers were thoroughly trained on proper interviewing techniques and the questionnaire was first pre-tested to make sure all the questions were understandable. All three interviewers spoke fluent English and Kiswahili, Tanzania's two official languages. Interviews were conducted primarily in English, which is spoken fluently by most of the residents of Arusha and Dar es Salaam.

Care was taken to sample in areas where a representative demographic sample could be obtained. Since the HIV/AIDS prevention theme in *Maisha* specifically targeted men, we proposed that the sample would be stratified to obtain two-thirds men and one-third women. Educational background was also stratified, with the goal of obtaining two-thirds or more of the respondents in their teens and 20s, and over 90 per cent of the sample younger than age 40. Cultural background, religious orientation, marital status and education characteristics of the sample were intended to be representative of the urban areas of the country.

### 10.2 Demographic characteristics

The sample of demographic characteristics is as follows: gender: 62.1 per cent male; education: 26 per cent high school graduates, 16 per cent professional school graduates, and 23 per cent college educated; cultural group: 95 per cent African, one per cent Asian, one per cent Caucasian, and 3 per cent other minorities; Age group: 27 per cent teenagers, 46 per cent in their 20s, and 20 per cent in their 30s; marital status: 75 per cent single, 25 per cent married; and religious orientation: 72 per cent Christian, 24 per cent Muslim, 3 per cent tribal, and less than one per cent other beliefs. Cross-tabulations of gender and the educational level of respondents are provided in Table 1.

**Table 1 : Cross-tabulations of gender and education as percentage of sample**

	primary 1-6	secondary 7-9	High School 10-12	High School graduate	some college	college graduate	graduate school	completed MA or PhD
Men	7.7%	18.6%	12.3%	7.9%	6.0%	7.5%	1.2%	0.8%
Women	4.2%	7.1%	10.9%	8.5%	4.3%	2.8%	0.2%	0.0%

**Analysis Procedures.** Descriptive statistics were first computed for all the major variables in the research model. These statistics are provided in Table 2.

**Table 2: Descriptive Statistics of the Continuous Variables in the Research Questions and Hypotheses**

Variable	N	Mean	Std Dev	Minimum	Maximum
Parasocial Interaction <sup>1</sup>	451	32.5	8.7	10.0	50.0
HIV/AIDS Prevention Practices <sup>2</sup>	436	26.6	5.2	7.0	35.0
Reduction in sexual partners	471	0.28	1.1	-3.0	6.0
Personal concern of AIDS	500	2.9	1.3	1.0	5.0
Perception of low AIDS risk	497	3.5	1.3	1.0	5.0
Fear of national AIDS epidemic	498	4.6	0.7	1.0	5.0
Belief in excessive AIDS concern	498	1.8	1.0	1.0	5.0
Little concern of HIV/AIDS	499	1.8	1.1	1.0	5.0
Saliency of AIDS issue	498	4.4	1.0	1.0	5.0
Perception of minimal AIDS risk	499	2.9	1.3	1.0	5.0
No discussion of AIDS w/partner	487	2.4	1.2	1.0	5.0
Restricting sex to one partner	499	4.4	0.7	1.0	5.0
Acknowledge need for HIV test	465	2.5	1.3	1.0	5.0
Awareness of heterosexual risk	472	2.3	1.2	1.0	5.0
Little influence on sex behaviour	468	2.4	1.2	1.0	5.0
Sexual partners in 1999	470	3.5	1.3	1.0	5.0

1. This variable is measured by a 10-item parasocial interaction scale.
2. This variable is measured by a 7-item HIV/AIDS prevention behaviour scale.

A correlation analysis was conducted to provide an overview of the linear associations among the independent and dependent variables in the study. The results of this analysis are provided in Table 3.

**Table 3: Pearson Correlation Coefficients and Probabilities (Prob > |r| under H0: Rho=0) for the Continuous Variables in the Research Questions and Hypotheses**

	PSIN	HAPV	RSP	q17	q18	q19	q20	q21	q22	q23	q25	q28	q31	q34	q35	q46
PSIN	1.00 0.00															
HAPV	0.14 0.004	1.00 0.00														
RSP	-0.03 0.60	0.02 0.70	1.00 0.00													
q17	-0.01 0.84	-0.10 0.04	0.10 0.03	1.00 0.00												
q18	0.01 0.82	0.25 .0001	-0.11 0.02	-0.24 .0001	1.00 0.00											
q19	0.14 0.03	0.14 .004	0.04 0.40	0.05 0.25	0.15 0.001	1.00 0.00										
q20	-0.032 0.498	0.02 0.70	-0.02 0.73	0.12 0.01	-0.05 0.25	-0.13 0.003	1.00 0.00									
q21	0.05 0.26	-0.06 0.22	-0.05 0.24	-0.13 0.003	0.03 0.44	-0.17 .0001	0.14 .002	1.00 0.00								
q22	0.24 .0001	0.10 0.04	0.03 0.54	0.09 0.03	0.04 0.32	0.35 .0001	-.07 .10	-.10 .01	1.00 0.00							
q23	0.02 0.68	0.13 .007	-0.09 0.04	-0.40 .0001	0.36 .0001	0.11 0.01	.02 .65	.09 .03	.04 .42	1.00 0.00						
q25	0.02 0.70	-0.13 0.01	-0.03 0.58	-0.02 0.67	0.00 0.93	-0.07 0.13	.07 .13	.16 .00	.00 .95	.02 .67	1.00 0.00					
q28	0.03 0.55	0.31 .0001	-0.00 0.99	-0.11 0.01	0.28 .0001	0.19 .0001	-.07 .11	.01 .89	.10 .02	.22 .0001	-.00 .94	1.00 0.00				
q31	0.00 0.94	0.29 .0001	-0.08 0.09	-0.18 .0001	0.12 .007	-0.13 .007	.05 .27	.14 .002	-.11 .01	.11 .01	-.02 .62	.13 .004	1.00 0.00			
q34	-0.06 0.23	0.04 0.42	0.002 0.97	0.01 0.78	0.00 0.94	-0.12 0.01	.22 .0001	.11 .02	-.15 .001	.00 .99	.16 .005	.05 .25	.12 .01	1.00 0.00		
q35	0.11 0.02	-0.07 0.15	0.012 0.76	0.03 0.55	-0.08 0.09	0.00 0.92	.02 .64	.14 .00	-.09 .05	-.08 .07	.18 .0001	-.00 .95	.00 .93	.20 .0001	1.00 0.00	
q46	0.34 .0001	0.21 .0001	-0.17 .0003	-0.09 .048	0.25 .0001	0.09 .061	-.02 .57	.02 .59	.22 .0001	.22 .0001	-.11 .02	.08 .07	.02 .69	-.12 .01	-.04 .44	1.00 0.00

PSIN = Parasocial Interaction

HAPV = HIV/AIDS Prevention Practices<sup>2</sup>

RSP = Reduction in sexual partners

Q17 = Personal concern of AIDS

Q18 = Perception of low AIDS risk

Q19 = Fear of national AIDS epidemic

Q20 = Belief in excessive AIDS concern

Q21 = Little concern of HIV/AIDS

Q22 = Salience of AIDS issue

Q23 = Perception of minimal AIDS risk

Q25 = No discussion of AIDS w/partner

Q28 = Restricting sex to one partner

Q31 = Acknowledge need for HIV test

Q34 = Awareness of heterosexual risk

Q35 = Little influence on sex behaviour

Q46 = Sexual partners in 1999

After the preliminary analyses were completed, factor analyses and correlation analyses were conducted to construct the measurement scales. The composite variables (parasocial interaction and adoption of HIV prevention practices) were then used in a series of regression analyses to test the four hypotheses.

## 11. RESULTS

The results are reported here in order of the five research questions and four hypothesized relationships analyzed.

### 11.1 Research questions

The first research question explored the extent to which audience members became more concerned about HIV/AIDS through learning about Mashaka's HIV infection. Regression analysis results indicate those who reported learning about the risk of HIV/AIDS to heterosexuals adopted more HIV prevention practices ( $Beta = .65, p < .001$ ), showing a very strong effect. In addition, those who had taken a blood test for HIV infection in the past four months reported a much higher level of learning about the risk of HIV/AIDS to heterosexuals through Mashaka's life than those who had not had a recent blood test ( $t\text{-value} = 3.88, df = 462, p < .001$ ).

Research question number two examined the extent to which those who were exposed to *Maisha* discussed HIV/AIDS with others, talked to their sexual partner(s) about HIV/AIDS prevention, reduced the number of sexual partners they may have had, and discussed the need to take a blood test for HIV infection. The results indicate that those who watched *Maisha* talked to more people about AIDS during the last four months ( $t\text{-value} = 3.98, df = 455, p < .001$ ), discussed Mashaka's AIDS infection with more people since learning about it by watching *Maisha* ( $t\text{-value} = 4.36, df = 453, p < .001$ ), and talked with more people in the past four months about the need to take a blood test for HIV ( $t\text{-value} = 2.44, df = 458, p < .05$ ), as compared to those who did not watch the programme. However, watching *Maisha* had no effect on whether or not the respondents discussed HIV/AIDS with their sexual partner(s) or on having reduced the number of sexual partners they had within the past six months.

Research question three investigated the degree to which men and women differed in their concern about AIDS, perceptions of risk, discussion of AIDS risk with their sexual partner(s), and adoption of HIV/AIDS prevention practices. The results indicate that men and women did not differ in their personal concern about acquiring AIDS or their beliefs on how much they were at risk of acquiring AIDS. However, men discussed the threat of AIDS with their romantic friend(s) or sexual partner(s) more than women

( $t$ -value = 2.68,  $df$  = 481,  $p$  < .01), and adopted more HIV/AIDS prevention practices than the women ( $t$ -value = 2.20,  $df$  = 432,  $p$  < .05).

The fourth research question analyzed assessed to what extent men and women differed in their degree of involvement with Mashaka, the star of the soap opera *Maisha*. Surprisingly, our results indicate that there was no difference in men's and women's parasocial relationships with Mashaka ( $M$  = 32.5 for men,  $M$  = 32.6 for women, on a scale with a range from 10 to 50, with 50 representing the greatest possible involvement).

The last research question explored how the participants' level of education might be associated with the way in which television viewers responded to the HIV/AIDS prevention messages in *Maisha*. Regression analysis results yield some important differences on the respondents' sexual practices. Respondents with less education were more likely to believe there was too much concern about the risk of AIDS (Beta = .11,  $p$  < .001), while those with more education felt more strongly that the issue of HIV/AIDS is a topic of personal importance (Beta = .05,  $p$  < .05). Those with less education were also more likely to acknowledge that they needed to take an HIV blood test (Beta = .08,  $p$  < .05). Finally, those with less education were more likely to acknowledge that they did not think much about the threat of HIV/AIDS to heterosexuals until they watched the plight of Mashaka on episodes of *Maisha* (Beta = .09,  $p$  < .05).

## 11.2 Hypotheses

All the hypothesis tests were conducted with SAS (2000) linear regression methods. Each regression analysis tested the linear relations between a single dependent variable with one or more independent variables.

The first hypothesis predicted that media exposure to *Maisha* would be positively associated with the development of a parasocial relationship with Mashaka, the star of the programme. The results indicate that respondents who watched *Maisha* did develop stronger parasocial relationships than those who did not ( $t$ -value = 4.04,  $df$  = 449,  $p$  < .001), an obvious prediction. However, the degree of exposure to the programme was not associated with the strength of the respondents' parasocial relationship with Mashaka (Beta = -.03,  $p$  = .57), an important finding. Thus, the first hypothesis was supported but with a substantial and unexpected caveat.

The second hypothesis predicted that a parasocial relationship with Mashaka would be associated positively with the adoption of HIV prevention practices. The results support this hypothesis. Those more strongly involved with Mashaka through parasocial interaction adopted HIV/AIDS prevention practices more strongly (Beta = .14,  $p$  < .01).

Hypothesis three predicted that a parasocial relationship with Mashaka would be associated positively with communicating honestly to a sexual partner about one's sexual history. This hypothesis was also supported by the research results. Sexually active respondents who related more strongly to Mashaka through parasocial interaction were more likely to discuss their sexual history honestly with their sexual partner(s) (Beta = .34,  $p < .001$ ).

The last hypothesis predicted that a parasocial relationship with Mashaka would be associated positively with (a) having a blood test for HIV infection within the past four months; and (b) reducing the number of sexual partners in the past six months. The results indicate that a parasocial interaction with Mashaka did not predict whether or not the respondents had taken a blood test for HIV infection in the past four months. Likewise, those who exhibited a stronger parasocial interaction with Mashaka did not reduce their number of sexual partners any more than others did in the past six months. Thus, hypothesis four was not supported.

### 11.3 Additional analyses

Two other important results emerged from our analyses that were not included in our original set of research questions and hypotheses. First, when investigating levels of personal concern about acquiring AIDS, we discovered that contrary to our expectations, those who were more concerned about acquiring AIDS were less likely to have taken a blood test for HIV infection in the past four months (Beta = .18,  $p < .001$ ).

Second, we found that a parasocial relationship with Mashaka was positively associated with the degree to which respondents were personally concerned about AIDS in general (Beta = .14,  $p < .01$ ) and were more fearful about the threat of AIDS to their country (Beta = .24,  $p < .001$ ). These findings also have important implications, which will be discussed in the next section.

## 12. DISCUSSION

The results of our research are consistent with some past findings but also shed new light on the use of television programmes for health education and persuasion. Our overall results add to the growing body of literature indicating that entertainment media can be an effective means for motivating people to adopt beneficial health practices. Through the influence of a single television series broadcast over a one-year period, respondents acquired a greater concern about HIV/AIDS, particularly among heterosexuals, were motivated to discuss their risk of AIDS and AIDS prevention with their friends and sexual partner(s) more openly and honestly, and were persuaded to adopt HIV-prevention practices to reduce their risk of acquiring AIDS.



However, the television series did not seem to influence two of the most important behaviours needed to reduce the spread of HIV/AIDS. Those who watched *Maisha* were not more likely to have taken a blood test for HIV infection in the past four months, and were not more likely to have reduced their number of sexual partners in the past six months. Thus, although the television series clearly promoted HIV/AIDS prevention, its influence on actual behaviour change based on self-assessment appears to be limited.

We did find, however, that those most powerfully influenced by *Maisha* were those who were more involved with Mashaka, the star of the programme, through parasocial interaction. While exposure to the series by the general audience produced limited but beneficial effects, exposure of those more strongly involved with the main character in the series produced important changes in those viewers. It is these viewers who are more likely to have made substantial changes in their sexual practices to reduce their risk of HIV infection and AIDS. Our analysis of our qualitative data, in fact, documents many hundreds of specific behaviour changes that respondents reported when asked, "Has the soap opera *Maisha* influenced you in any way; and if so, how?" A substantial number of respondents reported they had decided to practise abstinence, use condoms, become faithful to one sexual partner, and reduce their promiscuous behaviour as a result of watching the series. The dramatic depiction of Mashaka's battle with AIDS and the number of lives he affected clearly had a persuasive influence on a large number of viewers.

One of the implications of our research is that predicting who will be more strongly influenced by an entertainment television series is not easy to do. Not everyone in the audience grew to like Mashaka as a character, but even those who disliked him learned from his behaviour and the consequences of his behavior, consistent with Bandura's social learning theory (1986). For example, in the series, Mashaka did not know about his HIV infection for some time and then hid his sickness from his sexual partners. Audience members who observed this behaviour and closely related to him indicated that they would be more honest with their sexual partner(s) about their sexual history, and not act like Mashaka did. Thus, Mashaka was an effective negative role model for many viewers. Yet, viewers were also fearful to take an HIV blood test, and raising their concern about AIDS only increased their apprehension about having their blood tested.

Entertainment programmers need to continue to make entertaining programmes that captivate the involvement of viewers based on the unique characteristics of each targeted audience (Agunga, 1998), but must at the same time find creative ways to motivate people to do things they might be fearful of doing. Medical tests are often associated with fear and must be associated with some form of reward. As governments like Tanzania continue the tackle to great challenge of curtailing the spread of AIDS, entertainment

media should be considered a viable means of achieving this goal, but not a simple means. Audience involvement with entertainment media is as complex as are the effects of entertainment programmes on health beliefs and behaviour. Local communities must become involved in the entertainment education process if it is to be successful as an effective means of promoting health and development (Verwey & Crystal, 1988). At the same time, virtual teams (see Barker & du Plessis, 2002) of entertainment education experts such as the research specialists of *Soul City* should be employed to help mentor others in the entertainment-education (EE) strategy.

Future research should continue to explore useful theoretical frameworks for understanding the potentially powerful effects of entertainment media on public health. In addition, future studies should seek to explain why certain people make dramatic changes in their behavior in response to their involvement with celebrities, fictional characters and other media personalities.

## References

- AGUNGA, A.A. 1998. Communication for development in Africa. *Communicare*, 17(1):28-48.
- ANDERE, A. 1987. 'Tushauriane' takes off tonight. *Standard*, (Nairobi, Kenya):4.
- BABB, V. & BROWN, W.J. 1994. Adolescents development of parasocial relationships through popular television situation comedies. Paper presented to the International Communication Association, Sydney, Australia.
- BANDURA, A. 1986. Social foundations of thought and action: A social cognitive theory. Englewood Cliffs: Prentice-Hall.
- BARKER, R., & DU PLESSIS, D. 2002. Towards an integrated communication profession: A pilot study. *Communicare*, 21(2):1-28.
- BBC NEWS. 2002. UN AIDS drama not realistic enough. [Web:] <http://news.bbc.co.uk/2/hi/africa/2195252.stm>. [Date of access: 3 Sept. 2003].
- BROWN, W.J. 1991. An AIDS prevention campaign: Effects on attitudes, beliefs, and communication behavior. *American Behavioral Scientist*, 34:666-687.
- BROWN, W.J. 1992. Culture and AIDS education: Reaching high-risk heterosexuals in Asian-American communities. *Journal of Applied Communication Research*, 20:275-291.
- BROWN, W.J. & BASIL, M.D. 1995. Media celebrities and public health: Responses to "Magic" Johnson's HIV disclosure and its impact on AIDS risk and high-risk behaviors. *Health Communication*, 7:345-371.
- BROWN, W.J. & CODY, M.J. 1991. Effects of a prosocial television soap opera in promoting women's status. *Human Communication Research*, 17:114-142.

BROWN, W.J., DUANE, J.J. & FRASER, B.P. 1997. Media coverage and public opinion of the O.J. Simpson trial: Implications for the criminal justice system. *Communication Law and Policy*, 2:261-287.

BROWN, W. J., FRASER, B. P., KIRUSWA, S. & BOCARNEA, M.C. 2002. Promoting HIV/AIDS prevention through soap operas: Tanzania's experience with "Maisha." Paper presented at the annual meeting of the International Communication Association, July 15-19, Seoul, Korea.

BROWN, W.J. & FRASER, B.P. 1993. A comparative analysis of the uses and impact of daytime television talk shows on religious television viewers. Paper presented to the Annual Conference of the Society for the Scientific Study of Religion, held at Raleigh, N.C. from 23-26 October.

BROWN, W.J., SINGHAL, A. & ROGERS, E.M. 1989. Pro-development soap operas: A novel approach to development communication. *Media Development*, 36(4):43-47.

CIDA. 2000. HIV/AIDS – Confronting the global pandemic. Quebec, Canada : Canadian International Development Agency.

COURIER ACP-EU. 2002. Soul City: Genuine "reality" TV. No. 195, November-December:67-68.

CNN.COM. 2000. World Bank may put \$500 million toward AIDS fight in Africa. [Web:] . [Date of access: 10 Aug. 2000].

COLEMAN, P.L. & MEYER, R.C. 1989. Proceedings from the Enter-Educate Conference: Entertainment for Social Change. Los Angeles, CA: University of Southern California, Annenberg School for Communication from 29 March – 1 April, 1989.

DE WIT, G. 2001. The strategic value of "chaos" in the South African context for the training of communication students. *Communicare*, 20(2):67-98.

HORTON, D. & WOHL, R.R. 1956. Mass communication and parasocial interaction: Observations on intimacy at a distance. *Psychiatry*, 19:215-229.

JACOBY, R. & FOKKENS, P. 2000. Proceedings from The Third International Entertainment Education Conference for Social Change. Gouda, Netherlands: Netherlands Entertainment Education Foundation.

JAPHET, G. 1999. Edutainment: How to make edutainment work for you. Houghton, South Africa : Soul City.

JAPHET, G. & GOLDSTEIN, S. 1997. Soul City experience. *Integration*, 53:10-11.

JOHNS HOPKINS UNIVERSITY. 1997. Proceedings from The Second International Entertainment Education Conference for Social Change at Ohio University in Athens, OH, from 7-10 May.

KINCAID, D. L. 2002. Drama, emotion and cultural convergence. *Communication Theory*, 12(2):136-152.

LEVY, M. 1979. Watching television news as parasocial interaction. *Journal of Broadcasting*, 23:69-80.

MAZRUI, A. & KITSALO, J. 1988. A formative survey of Ushikwapo Shikimana. Nairobi, Kenya : National Council for Population and Development.

MUCHIRI, F. 1989. They must return "Tushauriane" to us. *Kenya Times*, 3A.

- MUROKI, F. 1989. 'Tushauriane': Now actor speaks out. *Standard* (Nairobi, Kenya):3E.
- MYERS, M. 2002. From awareness to action: Tackling HIV/AIDS through radio and television drama. Disaster Studies Working Paper 5. London : Benfield Grief Hazard Research Centre.
- ODINDO, J. 1987. Local soap opera sets new standards. *Daily Nation*, (Kenya):A1.
- ONE WORLD US. 2003. Radio drama changes lives in Ethiopia. [Web:] <http://us.oneworld.net/article/view/66584/1/> [Date of access: 3 Sept. 2003].
- PIOTROW, P.T., RIMON, J.G. II, WINNARD, K.E., KINCAID, D.L., HUNTINGTON, D. & CONVISSER, J.M. 1990. Mass media family planning promotion in Nigeria. *Studies in Family Planning*, 21(5):265-274.
- PIPER, D.P., KEELER, J. & BROWN, W.J. 1997. Audience involvement with Touched by an Angel. Paper presented to the 42nd annual convention of the Broadcast Education Association in Las Vegas, Nevada, 4-7 April.
- PLANETWIRE.ORG. 2002. World AIDS Day 2002: Stamping out stigma: Focusing on communication. [Web:] <http://www.planetwire.org/details/3455/>. [Date of access: 3 Sept. 2003].
- REYNOLDS, J.L. 1998. Value perceptions in the soap opera, Another Life. Doctoral dissertation. Virginia Beach, VA : Regent University.
- RISOPATRON, F. & SPAIN, P.L. 1980. Reaching the poor: Human sexuality education in Costa Rica. *Journal of Communication*, 30:81-89.
- ROGERS, E.M., VAUGHAN, P.W., SWALEHE, R.M.A., RAO, N., SVENKERUD, P., SOOD, S. & ALFORD, K.L. 1997. Effects of an entertainment-education radio soap opera on family planning and HIV/AIDS prevention behavior in Tanzania. Albuquerque, NM: University of New Mexico, Department of Communication and Journalism.
- ROGERS, E.M., VAUGHAN, P.W., SWALEHE, R.M.A., RAO, N., SVENKERUD, P., SOOD, S. & ALFORD, K.L. 1998. Effects of an entertainment-education radio soap opera on family planning in Tanzania. Unpublished paper. Albuquerque, NM: University of New Mexico, Department of Communication and Journalism.
- RUBIN, A.M. 1996. Personal involvement with the media. Paper presented to the 82nd Annual Convention of the Speech Communication Association in San Diego, CA., 23-26 November.
- RUBIN, R.B. & MCHUGH, M.P. 1987. Development of parasocial relationships. *Journal of Broadcasting and Electronic Media*, 31:279-292.
- RUBIN, A.M. & PERSE, E.M. 1987. Audience activity and soap opera involvement: A uses and gratifications investigation. *Human Communication Research*, 14:246-268.
- RUBIN, A.M., PERSE, E.M. & POWELL, R.A. 1985. Loneliness, parasocial interaction, and local television viewing. *Human Communication Research*, 12:155-180.
- RYERSON, W. 2001. About PMC – Sabido Method. Shelburne, Vermont : Population Media Center.

- SABIDO, M. 1989. Soap Operas in Mexico. Paper presented at the Entertainment for Social Change Conference in Los Angeles at the University of Southern California, Annenberg School for Communication, from 29 March – 1 April, 1989.
- SALMON, C.T. 2000. Setting a research agenda for entertainment-education. Atlanta, GA : Centers for Disease Control.
- SALMON, K. 2003. Persuade a man, without hitting him on the head. Inter Press Service. [Web:] <http://www.aegis.com/news/ips/IP0030608.html>. [Date of access: 3 Sept. 2003].
- SAS INSTITUTE, Inc. 1990. SAS Language: Reference Version 6.11. Cary, NC : SAS Institute Inc.
- SAWYER, J. 2002. Soap operas are proving helpful in informing public. St. Louis Post-Dispatch. [Web:] . [Date of access: 9 Sept. 2003].
- SHEFNER-ROGERS, C.L., ROGERS, E.M & SINGHAL, A. 1998. Parasocial interaction with the television soap operas 'Simplemente Maria' and 'Oshin.' *Keio Communication Review*, 20:3-18.
- SINGHAL, A., OBREGON, R. & ROGERS, E.M. 1994. Reconstructing the story of "Simplemente Maria" The most popular telenovela in Latin America of all time. *Gazette*, 54:1-15.
- SINGHAL, A. & ROGERS, E.M. 1999. Entertainment-education: A communication strategy for social change. Mahwah, NJ : Lawrence Erlbaum Associates.
- SINGHAL, A. & ROGERS, E.M. 2001. India's communication revolution. New Delhi, India : Sage Publications.
- SINGHAL, A. & ROGERS, E.M. 2003. Combatting AIDS: Communication strategies in action. New Delhi, India : Sage Publications.
- SINGHAL, A., USDIN, S., SCHEEPERS, E., GOLDSTEIN, S. & JAPHET, G. (in press). Harnessing the entertainment-education strategy in Africa: The Soul City intervention in South Africa. (In Charles Okigbo (Ed.) *Development and communication in Africa*. Boston, MA : Rowman and Littlefield.)
- SOOD, S., LAW, S. & SINGHAL, A. 1998. Audience effects of "Tinka Sukh," a radio soap opera in India. Paper presented at a Workshop on the Social Use of Soap Operas, Mexico City, Mexico.
- SOUL CITY. 2003. Research and evaluations. Institute for Health and Development Communications. [Web:] <http://www.soulcity.org.za>. [Date of access: 9 Sept. 2003].
- TURNER, J.R. 1993. Interpersonal and psychological predictors of parasocial interaction with different television performers. *Communication Quarterly*, 41:443-453.
- UNAIDS. 2002. AIDS epidemic update. Geneva, Switzerland : UNAIDS.
- UNAIDS. 2000. Report on the global HIV/AIDS epidemic. Geneva, Switzerland : UNAIDS.
- UNITED NATIONS INFORMATION CENTRE. 2003. Heart & Soul could reach over 50 million across Africa. [Web:] . [http://www.unicnairobi.org/display.asp?section\\_id=22](http://www.unicnairobi.org/display.asp?section_id=22) [Date of access: 3 Sept. 2003].
- VALENTE, T.W. 1997. On evaluating mass media's impact. *Studies in Family Planning*, 28(2):170-171.

VALENTE, T. W., KIM, Y.M., LETTENMAIER, C., . & DIBBA, Y. 1994. Radio promotion of family planning in The Gambia. *International Family Planning Perspectives*, 20(3):96-100.

VERWEY, S. & CRYSTAL, A. 1998. Setting new standards for health communication in South Africa. *Communicare*, 17(1):117-142.