

Academic Research

The effectiveness of Urunana radio dramaedutainment in promoting safe pregnancy practices among rural couples in Rwanda

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'Urunana' is a 15-minute episodic radio drama that has been broadcast for 16 years on BBC, Radio 10 and Radio Rwanda. The program was designed to broadcast messages that educate Rwandans on current health issues, specifically, diseases associated with sexual reproduction in order to fight against HIV/AIDS. Additionally, the program transmits messages on family planning and maternal issues including safe pregnancy practices. However, no studies have been conducted to assess its effectiveness in the transmission of safe pregnancy practices among couples living in rural areas where maternal mortality and morbidity is high.

A descriptive cross sectional study was conducted to find out the effects of exposure to Urunana on the awareness of safe pregnancy practices among couples in Rwanda's rural areas. The study sought to determine the extent to which the program helped to increase the rural couples' knowledge and practice of birth preparedness, complication readiness and other safe pregnancy practices.

The study applied mixed methods of data collection and was conducted on 196 couples sampled from seven rural districts across Rwanda. 91.1 % (n=329) of couples reported having heard of Urunana radio drama. Furthermore, respondents reported they learned how to ensure safe pregnancy to varying degrees through listening to Urunana drama. Through the positive characters in Urunana's story lines, couples realized the importance of saving money for childbirth.

Rwanda has a functional primary health system that supports health promotion campaigns through mass media, community health workers and other approaches. Thus, there is a need to conduct a multivariate case study to determine exactly the effect of Urunana drama in promoting safe pregnancy practices among couples living in rural areas.

INTRODUCTION

Pregnancy is a critical period during which couples must adopt healthy practices to decrease the risks of morbidity and mortality of both the mother and the child.¹ To ensure a safe pregnancy, obstetricians advise pregnant women to develop a birth preparedness and complication-readiness plan.² In all stages of pregnancy, pregnant women, their partners, family members as well as the community should be aware of danger signs during pregnancy. Couples should also plan for a proper birth location and arrange for a skilled health provider who will deliver the baby. Lastly, couples should save money for transport and childbirth.³

Therefore, safe motherhood communication interventions should focus on the individual women, their family, husbands or partners, the community and the healthcare providers. These interventions must further equip them with information on birth preparedness and complication-readiness⁴. By intensifying maternal health campaigns, an estimated 289,000 maternal deaths would be prevented⁵.

Various conventions working towards maternal death and morbidity reduction have taken place. In 1994, the International Conference on Population and Development held in Cairo agreed on steps for action regarding the transmission of information about safe pregnancy practices and safer birthing procedures.⁶ Governments and their stakeholders were called upon to make greater and more effective use of the entertainment media, including radio and television soap operas, serial drama, folk theatre and other traditional media to encourage public discussion on topics related to maternal health promotion.^{5,7}

Following these recommendations, serial radio drama can be an effective way of reaching a wide audience in the most rural settings in Africa, which are strongly affected by maternal mortality and morbidity. Specifically, Rwanda registered a high maternal mortality ratio (1071 maternal deaths per 100,000 live births) between 1995 and 2000. The period just after the 1994 genocide against the Tutsi was marked by a high need for health promotion activities. Due to ignorance, low literacy, poverty and limited health infrastructure at the time, three-quarters of births in the rural areas were not assisted by a skilled attendant.⁸ Open discussion about sexual reproductive health issues was almost nonexistent. This was partially responsible for unwanted pregnancies, HIV/AIDS and other sexually transmitted diseases recorded at the time. In addition, the use of family planning was constrained by lack of information on the availability of contraceptive methods and misconceptions regarding side effects of modern family planning methods; hence health promotion campaigns using various approaches had to be designed to address the issue.⁸

De Fossard argues that radio brings exciting, entertaining dramas into the homes of millions of listeners.⁹ Radio engages their emotions while informing them of new ideas and behaviors that can improve their lives and their communities. Edutainment radio serial dramas have a continuous plot that unfolds in sequential, episode-by-episode fashion. They are primarily designed to entertain but also convey educational messages as they unfold.¹⁰ Edutainment serial drama has proven effective in changing the knowledge, attitudes, behavior and norms of people living in rural areas.⁹

Drama can evoke emotions by creating role models and stimulating discussion among listeners and viewers.¹¹ To address the high need of sexual and reproductive health information and discussion in Rwanda, Urunana Development Communication, a Rwandan nongovernmental organization specializing in health promotion chose drama as a reliable tool to reach rural areas. Rural areas were singled out because they are hard to reach and are seriously affected by maternal mortalities and morbidities.¹²

In Rwanda, the radio remains the most common form of media exposure with 68% of women and 87% of men reporting that they listen to the radio at least once a week.⁸ A number of health messages covering topics like HIV/AIDS, malaria, tuberculosis, nutrition, hygiene and safe motherhood have been channeled through radio programs. Therefore, Urunana Development Communication started the Urunana serial edutainment drama in 1999. Unlike other radio dramas like “Museke Weya” (Twilight) and “Umurage Urukwiye” (Bright Future), “Urunana” (Hand in Hand) has solely focused on health promotion activities in Rwanda.

Urunana focuses on listeners’ health and welfare concerns. Apart from dealing with themes of HIV/AIDS, the drama also addresses safe pregnancy practices, family planning, malaria and adolescent reproductive health. For the promotion of safe pregnancy practices among rural couples, Urunana transmits messages encouraging couples to attend antenatal sessions. It also airs messages that inform couples about danger signs during pregnancy and how they can intervene once they notice them. The program further passes messages about the benefits of planning for birth, embracing hygiene and birth spacing as well as about men’s contribution to making pregnancy and childbirth healthy.

The program has been broadcasted for almost 16 years on BBC and Radio Rwanda. Some previous studies conducted about Urunana dealt with its role in the fight against malaria, the promotion of adolescent reproductive health and raising awareness on HIV/AIDS knowledge, attitudes and practices. Urunana is the most listened-to serial drama in Rwanda with a 75% listenership countrywide.¹³ However, little is known about how effective this popular radio drama edutainment program has been in the promotion of maternal health in Rwanda. Furthermore, there is a gap in information about the extent to which Urunana helped to promote safe pregnancy practices among couples in rural areas of Rwanda. Collecting and analyzing data on the effectiveness of this program in the promotion of safe pregnancy practices among couples in Rwanda’s rural areas would help revamp sensitiza-

Participants’ demographic characteristics

		Age group					Total	
		15-20	21-30	31-30	41-49	50-59		
Sex	Male	Frequency	1	50	91	41	13	196
		Percentage	0.5%	25.5%	46.4%	20.9%	6.6%	100.0%
	Female	Frequency	2	91	73	29	1	196
		Percentage	1.0%	46.4%	37.2%	14.8%	0.5%	100.0%
Total	Frequency	3	141	164	70	14	392	
	Percentage	8%	36.0%	41.8%	17.9%	3.6%	100.0%	

Table 1: Age. As shown above, the highest concentration of survey participants was in the 31-40 age group for males and the 21-30 age group for females.

		Level of education				Total	
		Have not gone to school	Have attended at least primary school	Vocational training	Secondary school		
Sex	Male	Frequency	23	152	7	14	196
		Percentage	11.7%	77.6%	3.6%	7.1%	100.0%
	Female	Frequency	20	151	14	11	196
		Percentage	10.2%	77.0%	7.1%	5.6%	100.0%
Total	Frequency	43	303	21	25	392	
	Percentage	11%	77.3%	5.4%	6.4%	100%	

Table 2 shows that most of the participants (n=303, 77.3%) attended at least primary school. The proportion of females with vocational training education was twice that of men in the same category. However, the percentage of men with a secondary school education was slightly higher than that of females (7.5% for males and 5.6% for females).

		Occupation of the respondents					Total	
		Farmer	Trader	Private sector	Professional in public sector	Others		
Sex	Male	Frequency	148	12	5	5	26	196
		Percentage	75.5%	6.1%	2.6%	2.6%	13.3%	100%
	Female	Frequency	164	15	0	3	14	196
		Percentage	83.7%	7.7%	0%	1.5%	7.1%	100%
Total	Frequency	312	27	5	8	40	392	
	Percentage	79.6%	6.9%	1.3%	2.0%	10.2%	100%	

Table 3: Occupation of the respondents. With regard to the respondents’ professions, the majority of the respondents (79.6%) earned their living from subsistence farming. 10.2% of participants earned their living through other professions, such as driving, masonry, fishing and sawing.

No. of children	Percentage	Number
1-3	63.2	241
4-6	31.5	120
7 and above	5.5	21

Table 4: Frequency and percentage of children couples have. The majority of respondents (n=241, 63.2%) had less than four children. On average, each respondent had 3.19 children.

tion efforts to birth preparedness, complication readiness, nutrition and other safe practices and behaviors that rural couples should adopt during pregnancy. To respond to this gap, this study aimed to answer the following questions:

- To what extent has Urunana drama helped to increase the knowledge and practice of birth preparedness, complication readiness and safe pregnancy practices among couples living in rural Rwanda?
- How has Urunana radio drama influenced practices associated with safe pregnancy among couples living in rural Rwanda?

METHODS

Study design

The study was a cross sectional analysis that applied both qualitative and quantitative methods to assess the extent to which Urunana informed couples on safe pregnancy practices in rural areas.

To control the study's confounding variables, the researcher focused on capturing couples' testimonies on how they practice safe pregnancy as a result of Urunana. Other sources of information like health messages from other mass media tools, health campaigns, antenatal sessions and information from community health workers in charge of maternal and child health were not given much focus.

Setting and sampling procedures

In this study, the term rural area refers to a remote or suburban area in the countryside. The rural area is also defined in terms of its proximity to roads, health facilities, schools and economic activities such as markets and business centers. Economic activities practiced in rural areas include farming, fishing, carpentry and small-scale husbandry.

To allow for the representation of every Rwandan province, at least one district was selected from each province. The researcher identified seven districts in total in which to conduct the study. Data was collected in ten selected villages in the Rulindo, Gakenke, Kamonyi, Bugesera, Rwamagana, Ngororero and Nyarugenge Districts. Both married and cohabiting couples living in rural areas who had at least one child were selected for this study. To ensure representativity of the sample, some households selected were near roads, health facilities and business centers. Others were far from these infrastructures, mainly in hard-to-reach, mountainous areas.

The researcher applied cluster sampling to select participants. Each village sampled had around 180-200 households. The researcher used the village registry to systematically select 20 households from eight villages. In Kamonyi and Ngororero, because the researcher selected one village in each, the number of households rose from 20 to 32 to meet the planned sample number. The sample for the study was then 384 participants (192 men and 192 women).

To get a fixed starting point, the total number of households in the village was divided by 32, which gave a periodic interval of six (6) households to ensure randomization in data collection. The researcher selected households for inclusion starting from household number three on the list, and subsequently every sixth household was selected for inclusion. However, when the data collection exercise ended, the researcher found that four more households were added. These respondents were also added to the initial sample and this made the total number of couples 196; that is, 392 male and female respondents.

The researcher liaised with the chief community health workers in selected village to recruit couples to participate in focus group discussions. A total of four focus group discussions consisting of currently pregnant women or those who had recently given birth and their partners were held to collect qualitative data. The number of participants in each focus group discussion was limited to eight people. During these interactive sessions, the role of Urunana in informing rural couples on safe pregnancy practices, which characters from the program inspired them, and what participants thought could be improved on the program was discussed. Initially, eight focus group discussions were planned. However, only four focus group discussions were held, since they satisfied the researcher's point of information saturation.

During the focus group discussions, information from participants was recorded using digital audio recorders and transcribed verbatim by the research assistants. Participants were fully informed of the nature and purpose of the study; verbal consent for participation was obtained.

Data analysis process

In analyzing data from the survey, the qualitative content analysis process was applied. According to Cole as cited in Elo and Kynas, content analysis is a method of analyzing written, verbal or visual communication messages.^{14, 15} For the purposes of this study, content analysis was used to determine the effects of exposure to Urunana radio drama on the awareness of safe pregnancy practices, such as birth preparedness, danger signs recognition, complication readiness and healthy practices during pregnancy, among rural couples in Rwanda. The data from focus group discussions and in-depth interviews with selected community health workers in charge of maternal and child health complemented the data from the survey.

Qualitative data from focus group discussions were read and decoded. Each transcript was read several times in order to precisely extract the participants' accounts of what they learnt from Urunana radio drama. Thereafter, significant statements about focus group participants' responses were reported to clarify some topics from the general survey.

Data collection and data analysis were performed simultaneously. Strategies, such as member checking, peer examination and code and recode procedures, were used to increase credibility.

The software package used for statistical analysis (SPSS) was used to generate percentages, frequency tables and graphs on the extent to which Urunana contributed to the promotion of safe pregnancy practice among couples in rural areas in Rwanda.

Ethical approval was sought from the Uganda Christian University Postgraduate Research Committee. The researcher also received approval for data collection from the Kigali Health Institute Ethics Committee, representing the Rwanda National Health Ethics Committee. Before proceeding with data collection, participants were informed of the research objectives and gave their consent to the research by signing on the questionnaires.

Findings

The effectiveness of Urunana edutainment drama in promoting safe pregnancy practices among couples living in rural Rwanda*Couples' access to health information*

Survey results showed that 93.1% (n=362) of participants listened to the radio. Among listeners, the majority (70.4%, n=252) followed radio programs in the evening, whereas 10.8% (n=38) listened to the radio throughout the day. Participants who did not listen to the radio acquired information about safe pregnancy practices from other sources of information. Health centers (63.1%) and public hospitals (40%) were the first places where couples got information on safe pregnancy practices when they attend antenatal care sessions.

The study further found that only 10.8% of participants who ever listened to the radio reported that they had never heard of Urunana drama.

Urunana edutainment radio drama listenership among couples

In order to get detailed information on the frequency of listening to Urunana serial radio drama and how couples internalize the safe pregnancy information it airs, the researcher relied on responses to these questions:

- When did they last listen to the program?
- Which female characters from Urunana serial drama were pregnant or previously gave birth at the time?
- What were some of the complications those characters faced?

In order to find out how couples internalize the events surrounding maternal health issues, the researcher asked couples about female characters who were pregnant at the moment or who had recently given birth in the drama. Relevant female characters included Nyiramaliza, Gitefano's wife and a rural woman who had become pregnant without her husband's consent. Domina, a single woman who was impregnated along with her daughter by a renowned businessman in their suburban village, had recently delivered, along with her daughter Aline. Mugeni was also relevant; she had previously dropped out of school because she was both pregnant and HIV-positive. Another female character pregnant at the time was Devota, a nurse in the health center at Nyarurembo (the fictitious village in the Urunana serial drama) and Shyaka's partner. These female characters and their partners have been instrumental in transmitting various safe pregnancy messages designed for rural couples.

47.5% (n=154) of respondents mentioned a character that had previously given birth, including Nyiramaliza, Aline, Domina and Mugeni. 26.9% (n=70) answered Aline, 14.5% (n=47) mentioned Nyiramaliza, 3.4% (n=11) mentioned Domina, 0.6% mentioned Kankwazi, 1.2% mentioned Mugeni, and 0.9% mentioned Solina. Some participants mentioned Kankwazi and Solina; however, the plot of this drama showed that they had not given birth in the previous two years.

As for the obstacles that these female characters faced, many of the respondents (41%) did not recall any. Only 3% of respondents answered correctly that Aline, who conceived at an early age, did not attend antenatal care. 20.5% of participants mentioned that Aline's

		When did you last listen to Urunana drama?					
		Within the last two days	This week	Two weeks ago	This month	Sometimes back in three month	>1 year
Sex	Male	Frequency 18	34	57	13	45	8
	Percentage	10.3%	19.4%	32.6%	7.4%	25.7%	4.6%
	Female	Frequency 10	27	43	16	29	14
	Percentage	7.2%	19.4%	30.9%	11.5%	20.9%	10.1%
Total		Frequency 28(8.9%)	61 (19.4%)	100 (31.8%)	29 (9.2%)	74 (23.6%)	22 (7%)

Table 5: When couples previously listened to Urunana drama. 31.8% of participants followed Urunana drama two weeks before the

Information received	Percentage (%)	Frequency
Sexual and reproductive health	27.5	76
Family planning	38.8	107
Sexual transmitted diseases, including HIV	19.9	55
Safe motherhood, including safe pregnancy practices	27.8	77
Malaria prevention	10.9	30
Hygiene	18.5	51
Learning from positive characters	34.1	94

Table 6: Information participants received from Urunana drama

conception at an early age and not consulting a skilled attendant during pregnancy and childbirth caused her to suffer from fistula after delivery. 11.4% answered that both her mother and the rich man who impregnated her had harassed Aline.

Another character mentioned was Nyiramaliza, whose husband did not support her because she compromised their agreement to space births. Over a fifth of the respondents (22.3%) answered that she experienced poor living conditions characterized by the lack of nutritious food and being beaten by her husband. In addition, they answered that she did not attend antenatal care regularly. Few respondents (1.8%) succeeded in recalling the anemia and bleeding that befell Nyiramaliza during her pregnancy due to her living conditions.

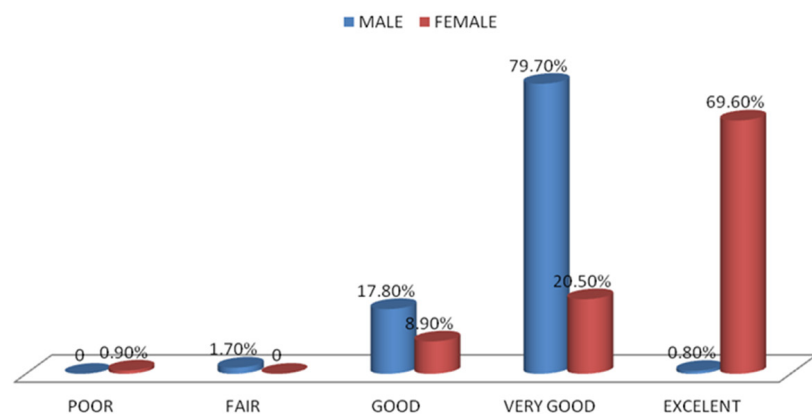
Lessons learnt by couples from Urunana edutainment serial drama

Couples were asked if they had learned anything from Urunana drama and what they benefitted from by listening to it. 81.9% (n=249) of the participants stated that they had learned from the program. The table below indicates the extent to which couples received information from Urunana drama.

As shown above, most of the regular listeners (38.8%) answered that they received information on family planning, 34.1% of participants learnt from positive characters from the program, and 27.8% received information about safe motherhood including safe pregnancy practices. It should be noted that the percentages do not add up to 100% because participants had to list more than one category of information learnt from Urunana drama.

To further capture the efficacy of the messages on safe pregnancy

Effects of Urunana in disseminating safe pregnancy practices



practices, participants were asked to list some of the safe pregnancy practices learned through listening to Urunana radio drama. One of the participants said:

“It is really an important program. It teaches us how to care for our wives focusing mainly on how a man can cater for his spouse during pregnancy.”

Another female participant in Gihara Village, Kamonyi District, in the Southern Province said:

“Urunana edutainment educates us on the benefits of attending ANC. I also learned about taking a balanced diet during pregnancy. I used to neglect consuming vegetables and fruits, but after I heard that they protect a pregnant

woman, my attitudes changed. At last, I understood well that avoiding heavy work during pregnancy and taking much rest are more important for a pregnant mother.”

One male participant from Bugesera District, in the Eastern Province said the following:

“The program made me aware of danger signs during pregnancy more, especially malaria.”

He added that it was through Urunana that he learnt that a pregnant mother should consume a balanced diet rich in essential nutrients.

Effects of Urunana drama in the promotion of safe pregnancy practices

The majority of the participants (85%, n=227) thought that the program’s messages on safe pregnancy practices might increase male listeners’ awareness of complication readiness and practices to adopt while their spouses are pregnant.

In order to assess the couples’ practice of what they hear from the program, participants were asked to list three practices they had learned from Urunana and applied to ensure safe pregnancy. 50.8% of respondents were able to mention at least one practice they had adopted to ensure safe pregnancy, 49.5% mentioned two, and 38.5% mentioned three practices they learned from the program and which they had embraced in their day-to-day lives to ensure safe pregnancy.

Additionally, respondents reported that from Urunana they had learned about ensuring that a pregnant woman takes a balanced and healthy diet (20.1%), attends antenatal care services (23.1%), is protected from heavy demanding work (22.1%) and rests (7.5%). Practices that contribute to safe pregnancy but were reported with a low frequency (0.5% to 3%) include doing sports, sleeping under treated mosquito nets, ensuring hygiene during pregnancy, protecting a pregnant woman from gender-based violence and mental harassment, providing adequate birth spacing, avoiding non-prescribed medicine, avoiding alcoholic drinks and avoiding smoking. In addition, it was found that 19% of 195 male respondents smoked when their partners were pregnant and 3.7% of women smoked during pregnancy. As for alcohol consumption by pregnant women, 42.6% of women interviewed consumed alcoholic drinks during pregnancy.

The role of Urunana edutainment drama in disseminating safe pregnancy practices

Couples were asked if they found the information about safe pregnancy practices transmitted through Urunana helpful. Despite the issue of recalling characters and events surrounding them, the majority of participants (96.5%) claimed that it had been helpful for them. In order to assess how effective Urunana has been in

promoting safe pregnancy practices among rural couples, couples were also asked to rate it compared to other programs or campaigns of safe pregnancy.

As shown in this graph, Urunana was rated very well with 79.7% of male participants agreeing that it was “very good” at promoting safe pregnancy practices. 69.6% of females rated it as “excellent,” and another 20.5 % of females rated it as “very good.” 17.8% of women and 8.9% of men reported that the program has been “good” at promoting safe pregnancy practices.

We asked participants what could be improved to make the program more relevant and helpful for ensuring safe pregnancy for women in rural areas. The majority of the respondents (40.4%) proposed that the Urunana crew should present some scenes from the drama (for example, caring for a pregnant mother) in their villages. 37.5% asked for an increase in the length of the program.

Another 22.1% of the participants proposed that Urunana should bring in more couples in the reproductive age group so as to ensure the continuity of delivering messages about safe pregnancy. Moreover, they suggested that the program should introduce a character who reflects rural ways of living to foster positive attitudes and behaviors towards pregnant women in that context.

To understand more about the effects that Urunana had on couples living in rural areas, participants were asked to enumerate some of the changes in pregnancy practices in their villages brought about by listening to the drama. Couples noted having learned the dangers associated with not caring for a pregnant woman. One of the most important safe practices during pregnancy they mentioned is to deliver at a health facility to avoid some of the danger signs after delivery.

Aline, an un-married young girl in this drama who delivered at young age, was one of the female characters that couples recalled most. Participants discussed that through her, they learned that if a pregnant mother is not catered for in terms of good nutrition and psychological support, she could face fatal complications. Hence, they stated that they should ensure that a woman leads a healthy lifestyle during pregnancy.

In an interview with one Community Health Worker in charge of MCH in the village of Mageragere, in the Nyarugenge District of Kigali City, the researcher asked her how Urunana has aided in the fulfillment of her duties.

“The program is helpful to me. ... I have got messages about delivering into the hands of skilled birth attendants who will care for the newborn; I have applied this in sensitizing couples in this village to always go to the health facility for delivery or complications during pregnancy.”

Another community health worker said:

“Urunana boosts our knowledge and skills in our work of ensuring better maternal and child health. Couples here enjoy listening to the program; and it has facilitated our work. They value what we teach them because of Urunana edutainment.”

Couples' role models in safe pregnancy practices adoption

To understand how helpful Urunana has been in promoting safe pregnancy practices among rural couples in Rwanda, we asked participants to mention their role models and villains from the drama. The opinions gathered from the interviews presented the character Shyaka and his wife as ideal characters in ensuring safe pregnancy practices. Participants reported that they discussed the two when aiming to ensure safe pregnancy in their families.

One female participant from the Kabunigu village in the Northern Province had this to say:

“Shyaka encourages his wife to sleep under the mosquito net, take a balanced diet and even when she is not taking some he encourages her. He is always anxious about how she is feeling. He is really a character whom I envy. I wish all men here should emulate him in taking care of their wives during pregnancy.”

Although Shyaka and his wife are appreciated by the participants, men observed that adopting their behaviors requires formal education. One man during the focus group said, “For sure, the ideal care for a pregnant woman is that shown by Shyaka towards his wife. We try our best to care for our wives, but it is very hard for us rural men who have not gone to school to reach their level.”

Another character from whom they learned was Mariyana, a fe-

male character playing the role of a community health worker. In the program's storyline, she inspires couples to adopt safe pregnancy practices. A community health worker in Mareba Village in Bugesera District expressed her appreciation:

“Mariyana is a channel through which couples are sensitized to go for ANC screening, eating balanced diet, and planning for deliver[y] in the health facility. Though I do not follow the program regularly, the little I have heard transformed the way I perceive safe pregnancy issues and the way I counsel pregnant women.”

Another participant explained that Mariyana's messages inspired her family: “Listening to Urunana drama has impacted my interaction with my husband. Through the positive characters in the drama such as Mariyana who is always advising couples to embrace safe pregnancy practices and other health topics, my husband and I embraced family planning. My husband supports me in this endeavor.”

Although they had had two children some years back, the family of Bushombe and Kankwanzi, transitional humorous characters in Urunana, are also appreciated by the participants. They expressed that through them they acquired information on malaria prevention during pregnancy and also while planning for birth.

One woman in a focus group had this to say:

“For me, I like the family of Bushombe and Kankwanzi. For example, Bushombe supported his wife by doing heavy work during pregnancy. He made sure that he pays the health insurance on time. Personally, I understood the role of sleeping under the mosquito net thanks to way Bushombe's suffered from malaria as a result of using the mosquito net to protect their chicken from eagles.”

Stefano and Nyiramaliza are characters in the drama who failed to adopt safe pregnancy practices. The negative results thereof helped the audience to change their behaviors. Focus group participants blamed Stefano for failing to care for his wife and for harassing and battering her during pregnancy until she bled. A male participant in one of the focus groups shared what he learned from their conflict:

“For sure, that conflict between them inspired me to develop good communication with my wife about family issues, mainly contraceptive use to space births. My wife and I support each other in this endeavor.”

Couples' level of satisfaction with the information transmitted by Urunana on safe pregnancy

During the focus group discussions and key interviews, we asked participants whether they were satisfied with the way Urunana drama tackles safe pregnancy topics. Participants commended Urunana for the information about maternal health and reproductive health imparted to them. One participant had this to say:

“Urunana drama is really informative about reproductive health issues and safe pregnancy. They do their best to inform the public regardless of the age.”

Participants were asked to suggest what could be done to increase the information on safe pregnancy practices transmitted by Urunana. In three focus groups, participants observed that the issue of the neglect of pregnant women at health facilities has not been tackled. They suggested that including information about such situations in Urunana could improve the services offered to pregnant women and their partners.

Other participants in the focus group requested the Urunana team to also consider male and female couples preparing to get married. They advised that the program should package a set of messages on safe pregnancy practices to adopt as the couples anticipate marriage and childbirth. Participants argued that this might help couples pass through pregnancy safely, because the couples will have acquired information earlier, enabling them to plan ahead on child birth and complication readiness.

Lastly, a good score by participants in areas with electricity suggested that Urunana should be televised. A participant supported the idea:

“By showing Urunana in pubs, it may be an occasion to reach men who fail to plan for birth and yet spend the little money extravagantly there. Maybe, by watching the program, they can be transformed positively.”

DISCUSSION

This study is the first to assess the effectiveness of edutainment serial drama in promoting safe pregnancy practices in rural areas in Rwan-

da. Specifically, the study focused on the extent to which Urunana has been effective in promoting safe pregnancy in Rwanda.

Couples have benefited from listening to Urunana. Compared to the year 2005, there has been a great improvement in reproductive safety.¹² This study found a significant increase in couples' acquisition of sexual and reproductive information that contributes to safe pregnancy practices. The audience's knowledge about HIV/AIDS shifted from 16% to 20.8%, family planning from 19% to 42%, sexual and reproductive health from 22% to 29.2%, safe motherhood from 6% to 27.1% and good family communication from 6% to 38%.

The study indicates that the program appears to have been effective in the promotion of safe pregnancy practices among rural couples in Rwanda. Couples affirmed the role that the program has played in fostering the discussion within families on how to ensure a safe birth. Despite the recall bias noted during the survey, whereby half of the respondents failed to recall the female characters used to transmit safe pregnancy practices, the survey results showed that the program has still been instrumental in imparting knowledge about safe pregnancy practices. Couples claimed that by listening to the program they started to realize the importance of attending antenatal care sessions for couples, paying the health insurance on time and preparing for childbirth.

Particularly in mountainous areas, where transporting a pregnant woman to the health facility is a bit challenging, couples value saving for childbirth. Families have organized themselves in associations to encourage a saving plan for childbirth.

Listenership of Urunana among men and women

Radio can educate audiences without requiring their physical presence or even requiring them to be liberated. According to Sabido as quoted in, the only audience requirement is that listeners understand the language of broadcast.¹⁶ This format enables them to listen while performing other tasks. As a result, radio appears to be more accessible to working people during the day than other forms of media.

The findings of this study revealed that the exposure of couples in rural areas to Urunana varies depending on their regularity of listening. For example, the survey found that the proportion of women who had listened to Urunana radio drama within the two days prior to being surveyed was 7.2% (n=10). Unlike the present study, in 2005 a survey on listenership patterns among couples done by the Urunana Development Communication and Well Women Media, which runs the Urunana program, found that 20% of the female participants had listened to the program in the past two days.¹² Hence, there is a need to understand and address what obstacles impede couples' listening patterns for Urunana to reach its audience effectively.

Urunana drama exposure among males and females is significantly associated with higher levels of safe pregnancy practices. Respondents who have listened to the program reported that they intervene by taking a pregnant mother to the health facility if they notice bleeding, abdominal cramps and spontaneous abortion symptoms. Additionally, Urunana has encouraged males to attend antenatal care with their wives, to assist them with heavy work during pregnancy, to not batter them during pregnancy, to urge their wives to sleep under the mosquito net during pregnancy and to save money for transport and delivery.

However, the study did not measure changes in behavior as a result of Urunana. There has not been enough data because of the deficit of safe pregnancy knowledge, attitudes and practices in the formative research conducted by Urunana development communication.

The role of Urunana characters in influencing safe pregnancy practices

When listeners realize that an edutainment program epitomizes people like themselves, they become loyal to it and develop trust in the messages and modeling of the intended behaviors.¹⁷ The present study found that regular followers of Urunana are eager to know what happens next to the characters with whom they identify. This interest is likely due to the long running, involved stories of the drama that keep listeners interested in knowing the outcomes of situations their role models are struggling with, how they are getting punished for engaging in risky behaviors and how they get rewards from behaving healthily. In the process of following the plot, listeners learn from the characters' experiences depending on what stage of behavior change an individual character has reached.

However, this study did not incorporate analytical questions to col-

lect information on stages of behavioral changes couples have made in terms of practicing safe pregnancy. Additionally, the study did not ask couples how long they have been following the program. Despite this, the feedback from the focus group discussions highlighted that couples appear to have reached a certain stage of behavior change. There is a need for other researchers to explore the effectiveness of edutainment drama using some of the many behavioural change theories and also taking into account some of the environmental, personal and behavioural factors that may influence couples' safe pregnancy practices.¹⁸

Barriers affecting couples' Urunana listening frequency

Through focus group discussions, the study identified that there are barriers that affect couples' listenership to Urunana and impede their access to the messages about safe pregnancy practices. The major barriers identified include the time of broadcasting and, since the country has around 25 radio stations, the choice of radio station to which they switch. Work-related constraints like cooking and caring for children by women in the evenings and looking for domestic animals' grass by men, as well as the view of Urunana as a program designed for youth and the issue of buying batteries regularly in some rural areas without electricity were prominent factors affecting the program's listenership. The study limited the analysis to the interview accounts of participants. Therefore, there is a need to analyze barriers that affect couples' ability to listen to Urunana using quantitative methods. This analysis will provide reliable data for the designers of Urunana to take measures to address the identified constraints.

The influence of characters on couples' practice of safe pregnancy

In a serial drama, if the characters and settings are familiar to the audience, they can identify with the situations, conflicts and feelings of the characters.¹⁹ In light of this, the study identified that characters have a big influence on couples' safe pregnancy practices and perceptions. The study found that Mariyana, Shyaka and his wife Devota equipped couples with information and behaviors to adopt to ensure safe pregnancy. It was established that the couples disparaged the behaviors and practices manifested by Stefano toward his wife. Their conflict left the audience with a lesson about complying with the chosen birth spacing method, planning for birth and not conceiving at an advanced age.

Bandura holds that a good scriptwriter takes advantage of parasocial interaction, which refers to the ways in which audience members develop their one-sided relationships with the media being consumed, by creating believable characters who inspire listeners with a feeling of personal relationship.²⁰ As a result, listeners feel as if they are part of the drama and experience vicariously how adopting a new behavior feels, how others might react and how they might respond to situations that the characters encounter. Social learning theory, which holds that a certain behavior can be learned from the environment through the process of observing, can help the drama writers identify the types of characters that best attract the audience, the consequences of behavior that people are concerned about and the types of stories that give people increased confidence in their ability to perform a behavior.¹⁵

The study found that couples are still struggling to identify with characters that transmit safe pregnancy messages in Urunana edutainment drama, such as Mariyana, Devota, Shyaka and Nyiramaliza.

Education, relevant occupation and high frequency of listening to Urunana alone are not sufficient to enable couples to follow events that happen to the characters through which the messages about safe pregnancy practices are aired. Siegel and Doner argue that for long-term shifts in knowledge, attitudes and especially behavior, interventions must persist in reinforcing new messages and in using other kinds of communication and environmental support.¹⁷ To them, the chances of success of an edutainment serial radio drama as a media campaign are boosted when it reaches the target audience multiple times with consistent and clear messages. Brown extends this argument by stating that it takes at least three exposures to a relevant message to begin to change knowledge and attitudes, and probably more exposures to begin to affect health practices and behaviors.²¹ On the first exposure, the message may not be noticed consciously, but on the second some processing may occur. The third exposure may evoke more active processing and interpretation.

These ideas explain why some events in Urunana involving safe pregnancy practices have not yet captured couples' attention. Messages

about safe pregnancy practices are not aired in every episode of Urunana. Even when they are transmitted, some couples are not in a position to follow or remember them; hence, they may miss vital information on safe pregnancy practices. In addition, the data for this study covered all 15 years for which it has been broadcast. It is possible this scope might have impacted the listeners' recall of characters and the storylines around them. It is crucial for the creators of Urunana to give the same weight to the messages informing couples with safe pregnancy as they do for adolescent reproductive health, HIV/AIDS and awareness of other STIs. In addition, they should strengthen this drama with other approaches to reaching the community on safe pregnancy practices.

Furthermore, to ensure audience members are influenced by any media health messages, audience members must recognize the benefits of the actions described in their own lives.²² Edutainment should provide role models of satisfied adapters of the new idea for audience members to observe and emulate.

Although the study did not include any questions to lead to the stratification of the participants in relation to Urunana edutainment, the study discovered that some role models advocating for safe pregnancy relate to the couples' real lives. Despite the debate on the good behavior that Shyaka shows toward his wife, a few men in the rural areas wished that they could express the same love he shows his wife during pregnancy. On the other hand, through the negative characters, couples have been influenced to adopt safe pregnancy practices for fear of facing punishment and pain as Nyiramaliza did in the drama.

The study by Health Unlimited found that humor has been instrumental in keeping the audience tuned in.¹² Most people under normal circumstances will not resist a good laugh. The popularity of comic characters attracts and maintains listeners for a long time. As listeners wait to be entertained by their cherished humorous characters, they are simultaneously educated.²³ The humorous approach used by Urunana edutainment influences married audience members to focus on the entertaining characters. The study noted a recall bias, but surprisingly enough, Bushombe and Kankwanzi, who are humorous older transitional characters present throughout Urunana edutainment drama and who are used to transmit some health messages, are well remembered by the audience. Thus, it may be better if among the positive characters transmitting messages on safe pregnancy, there is one young humorous couple who may ensure that safe pregnancy practice messages are more appealing and realistic to the rural married audience's daily activities.

Ranking of Urunana

The results indicate that Urunana edutainment drama is effective (79.7%) in promoting safe pregnancy practices to couples in the selected villages. However, based on the recall bias noted when participants were asked to mention any character from the program who was pregnant or who recently delivered, this finding may appear prone to the response

bias. The researcher overcame this by asking participants to mention at least three things they do to ensure safe pregnancy. Almost every participant mentioned at least one practice they do to ensure safe pregnancy. Additionally, almost every participant was able to offer constructive feedback on how Urunana can be improved.

A good number of couples wished for characters of Urunana to reach them regularly. This response implies that the audience learns more from directly observing events taking place than from listening passively to the sequence of events in Urunana. It was requested that the program designers introduce in the drama more couples of reproductive age, to sustain the messages about safe pregnancy transmitted. Regular listeners observed that some topics, such as nutrition in pregnancy, were not dealt with deeply, leaving a gap in information. More importantly, information on micronutrient deficiencies during pregnancy, complications that endanger pregnancy such as anemia and hypertensive disorders and what to do to prevent them were not focused on by Urunana.

CONCLUSION

This study on the effectiveness of the edutainment radio drama Urunana in promoting safe pregnancy practices among rural couples in Rwanda confirmed that the objectives set have been achieved. The study answered questions about the level of knowledge of safe pregnancy practices among the couples living in rural areas, the effects of exposure to Urunana on couples' adoption of safe pregnancy practices and the extent to which the program helped to increase their knowledge and awareness of safe pregnancy practices.

The study identified Urunana's lack of information on the effects of alcoholic drinks consumption and smoking on pregnancy outcomes. The study also identified gaps in the information transmitted about anemia and hypertensive disorders. However, Urunana has contributed significantly to the promotion of birth spacing, nutrition for a pregnant woman, avoidance of heavy work, birth preparedness and complications readiness, attending ANC clinics and saving money for childbirth in rural families. De Fossard argues that the effectiveness of an edutainment program is shown when it helps managers meet objectives of changing a certain negative practice, increases the demand for services and motivates people to protect their health.²⁴ Thus, Urunana's themes on safe pregnancy practices may have almost fulfilled these characteristics.

It should be noted that this study did not measure the amount of information couples received; hence, there is a need for further research to apply statistical analysis to quantify the exact amount of information that couples receive from Urunana.

The findings from this study establish that the Urunana drama series may have been effective in promoting safe pregnancy practices in rural areas. However, there is a need to conduct a comparative study to show its exact place among other sources of information and other similar radio dramas.

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