

Applying an innovative tool of FM radio for health education at Institutional campus level- An Interventional study.

Prabakaran.J¹, S.T.Balamurali², Swathi karunambika K.P³, R.R.V.Shasswinn³

Affiliation: 1- Professor, Department of Community Medicine, 2. Prof & HOD, Department of Pharmacology, Madha Medical College& Research Institute, Chennai. 3- MBBS student, Madha Medical College& Research Institute, Chennai.

***Author for correspondence:** Dr.J.Prabakaran , Department of Community Medicine, Madha Medical College& Research Institute, Chennai. E mail: prabakaranpro@gmail.com

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ABSTRACT

Introduction: Health education is indispensable in achieving individual and community health. FM radio is a low cost and easily available medium. **Objective:** To provide health education in our hospital campus using FM Radio technology, including planning and setting up a FM radio station to deliver health education content at institutional and community level, to prepare various thematic health contents in different field of medicine, to broadcast and evaluate the usage of this innovative tool and its effectiveness. **Methods:** This was an experimental Study to check the feasibility of an intervention. After getting necessary administrative approval at college, we set up a low power FM transmission room. Day wise thematic contents were recorded and broadcasted three months in our hospital campus. Patients, staff and hospital attendees were the listeners. The broadcast time was limited to 10.00am-1 pm. **Results:** Out of 50 random feedbacks 74% listened the radio, 80% felt it is useful. Among feedbacks, 96.2% felt health education through FM is innovative and useful idea. Out of 50 ,23 felt very good (46%),12 felt excellent (24%),10 felt good (20%),3 felt fair (6%),2 felt that it needs improvement (4%). Increase the timing, reduce the repetition, increase the coverage area and include more health topics were suggestions received. **Conclusion:** FM radio is an effective medium for health communication and is feasible to adopt in medical college settings.

Key word: FM radio, Community Radio, health education, broadcast, ICMR-STs

INTRODUCTION

Health education can be defined as the process that informs, motivates, helps people to adopt and maintain healthy lifestyles, advocate environmental changes as needed to facilitate this goal and conducts professional training and research to the same end. Health education as a tool for health promotion was critical for improving the health of populations and promotes health capital.¹ These health activities occur in schools, workplaces, clinics and communities and include topics such as healthy eating, physical activity, tobacco use prevention, mental health, HIV/AIDS prevention and safety.^{2,3}

Health education programs has been informed by several theoretical models of health behavior changes including the Health Belief Model, the Theory of Reasoned Action, Operant Learning Theory and the Social Cognitive Theory (SCT). As per The US National Commission for Health Education Credentialing (NCHEC), the major responsibilities for health educators includes assessing needs, planning, implementing and evaluating the effectiveness of health education programmes,⁴

Nearly all health interventions had an associated educational component for their effective

deployment, but the extent of educational effort required ranges from the provision of simple information to efforts at increasing understanding and to attempts to change lifestyles.⁵ There were many tools that you can use to develop your health communication. Apart from personal and group communication, many tools like online images, entertainment education (TV, Radio), internet and social media. Radio is a popular and affordable medium of mass communication. Wide coverage; variety of programs; mobility; and low cost are the reasons for its popularity.⁶ Along with the public broadcaster - private commercial radio stations (FM Radio) and Community Radio Stations (CRS) are present in India. CRS serve a local and well-defined community, helping focus on the day to day concerns of its audience and satisfy their specific information and entertainment needs. The world over, community radio is seen as an important instrument for empowerment and social development, that's why community radio is also referred to as the radio of the people, for the people and by the people. The Government announced its policy for the grant of permission for setting up of CRS in December 2002.^{7,8}

FM broadcasting was a method of radio broadcasting using frequency modulation (FM) technology. Usually 87.5 to 108.0 MHz is used. Community radio is a radio service offering a third model of radio broadcasting in addition to commercial and public broadcasting.⁹ The Radio Club of Bombay broadcasted the first radio programme in India in June 1923 and then Calcutta. In the year 1947, the AIR network had only six Stations located at Delhi, Bombay, Calcutta, Madras, Lucknow and Tiruchirapalli.¹⁰ In India there were 243 operational FM Radio channels and in Chennai 8 channels as on 10.03.2016.¹¹ Internet radio is a digital audio service transmitted via the Internet. Internet radio is generally used to communicate and easily spread messages through the form.⁸ Hence we attempted health education through a low-cost FM Radio medium in our campus.

The Objectives of this study includes to plan and setup a FM radio station to deliver health education content at institutional and community level, to prepare various thematic health contents in different field of medicine, to broadcast and evaluate the usage of this innovative tool and its effectiveness.

MATERIAL AND METHODS

Study Setting: This study was conducted in our Medical College & Research institute's campus

Study Period: 3 months (May- July 2018)

Study Design: It was an Experimental Study to check the feasibility of an intervention.

Selection of Study Population: Listeners of our FM channel were from either online or live campus channel. In hospital campus the target population includes Staff, patients and other hospital attenders.

Pre-Requisites of study: These includes, FM Transmitter with antenna, Audio visual aids- Microphone, recorder, software, computer, FM radio etc., separate room for transmission, soundproof room for recording the content and preparation of contents.

Figure 1. FM broadcast antenna



Preparation of the Content: The content was prepared through a series of recordings with experts from the concerned field. Contents were recorded in Audiometry room for clear recording. First the content was prepared in English and was then translated into the local language - Tamil. The content was filled with music to induce interest among listeners. A weekly theme was selected and broadcasted.

Medium/Channels of communication: Techniques of FM Radio or Online Radio were utilized. The content was transmitted during a time when more people were aggregated in the campus, ie. OP hours. The same content was telecasted in Web radio in a

fixed timing. The broadcast was done under the name of Madha FM.

Method of Transmission:

A small FM transmitter with antenna was setup for transmission within our campus. We transmitted the content from our Community Medicine Department. FM/Online radios were placed in hospital reception, cafeteria, parking places for hearing. Also, information about the channel was displayed for the people to know. Posters of FM Radio were also displayed at prominent places.

Evaluation of Health education: A feedback forum was placed in the online page of our radio where we got response directly. Subsequently feedback and usefulness of the listeners were assessed using a schedule

Ethical Clearance: Ethical clearance for this study was obtained from Institutional Ethics Committee, MMC&RI.

Data management: All the health contents were stored securely for future use. The show timing was recorded in Excel sheet. The feedback and evaluation form were entered in MS excel and analysed in Epi info.

RESULTS

Process Documentation

The FM radio was functional from 10.00 am to 1.00 pm on working days. It covers our entire campus with more than 2 Km radius. We have purchased FM transmitter 7kv power, FM antenna with cable, necessary microphone and recording equipment, Mp3 player, FM radios, laptop and arranged necessary furniture in our Community Medicine department(Figure 2) After making a test run, it was inaugurated by our Managing director, Dean. A theme song was also prepared with variety of voices and music. Preliminary health education content was prepared in a soundproof room. Further, remaining content were prepared subsequently. The enough FM radios were placed in reception of hospital, wards, canteen and parking area.

Feedback results:

Out of 50 random feedbacks 98 %(n=49) would like to listen FM radio and 96%(n=48) correctly knew full

form of FM ie. Frequency modulation. Out of all, 58% hear FM for musical purpose, 40% for news, 34% educational or learning purpose. Out of 50 people,18 listen to music(36%),11 listen to news(22%),10 listen to educational to facts(20%),5 listen to news, educational facts, music(10%),4 listen to music and news(8%),2 listen to music and educational facts. (4%). Out of all, 29 listens to music, 20 listen to news,17 listen to educational facts. (Table 1, Figure 3)

Figure 1: Posters used in the college premises



Figure 1: During FM broadcast programme



Table 1: Kind of information gain by listening to FM by participants (n=50).

Particulars	Number	Percentage
Educational facts	10	20
Music	18	36
Music, Educational facts	2	4
Music, News	4	8
Music, News, Educational facts	5	10

News	11	22
Total	50	100

Among respondent, 42% people use internet to get health related information, followed by 38% through internet and 20% television. Out of 50, 21 people use internet, 19 use FM radio, 10 use television.

Table 2: Total hours of listening of FM radio per day.

Particulars	No	Percentage
One hour	29	58
None to Less than one hour	12	24
Two hours	5	10
More than two hours	4	8
Total	50	100

Most of them use (58%) listen FM for around one hour, 8% use more than two hours. (Table 2). Most of them felt advertisement was the disadvantage in FM programmes. Signal problem was second most disadvantage. Out of 50, 29 felt about signal problem, 14 felt about advertisement, 7 said about time delay/factors. Among respondent, 88% felt FM can be used for health communication. Out of 50, 44 people felt that health education is possible through FM and 6 felt that it is not possible.

Table 3: Health information willing to listen through FM

Particulars	Number	Percentage
Childcare	6	12
Communicable diseases	16	32
Communicable diseases, Childcare	1	2
Non communicable diseases	4	8
Road safety measures	12	24
Road safety measures, Communicable diseases	4	8
Road safety measures, Communicable diseases, NCD	1	2
Road safety measures, Communicable diseases, NCD, Childcare	6	12
Total	50	100

Out of 50, 16 listen to communicable diseases (32%), 12 listen to road safety measures (24%), 6 listen to child care (12%), 6 listen to child care, road safety measures, communicable diseases, non-communicable diseases (12%), 4 listen

to non-communicable disease (8%), another 4 listen to road safety measures and communicable disease (8%), 1 listen to communicable disease in child care (2%), another 1 listen to road safety measures, communicable and non-communicable diseases (2%) (Table 3). Out of all, 28 would like to listen for communicable diseases, 23 listen to road safety measures, 13 listen to childcare, remaining 11 listen to non-communicable diseases.

Out of 50 random feedbacks 74% listened the radio, 80% felt it is useful. Among feedbacks, 96.2% felt health education through FM is a innovative and useful idea. Out of 50, 23 felt very good (46%), 12 felt excellent (24%), 10 felt good (20%), 3 felt fair (6%), 2 felt that it needs improvement (4%) (Table 4). Suggestions to improve the activity is given in Box-1.

Table 4: Overall of rating for our MFM programmes

Particulars	No	%
Need Improvement	2	4
Fair	3	6
Good	10	20
Very good	23	46
Excellent	12	24
Total	50	100

Box 1. Feedback & Suggestion received our Radio

- Timing to be increased
- Repetition is to be minimized
- Coverage to be increased
- More health topics to be added
- Worth hearing
- Disseminate about the broadcast widely
- Innovative idea
- A great step in health education
- Use it for awareness generation
- very good choice to make people aware and to communicate with the rural uneducated people
- Exhibit student talent
- Innovative tool

DISCUSSION

This was the first experiment in a medical college in India to spread health information through FM Radio. The three types of health education (about body and functions, health services and environment) are covered in our FM programme. We can use the medium effectively for preventing diseases that are

solely based upon changing human behaviour. Educational community broadcasting enhances learning and provides information on various issues to help the audiences informed about decision making ranging from skill development, formal education, informal education, awareness regarding social problems, religious educational, and many other areas.¹² If the audience for the radio broadcast is sufficiently large the cost of development of the radio lessons and it can be spread over the listeners to get a low person cost.¹³ The Health Education profession is dedicated to excellence in the practice of promoting individual, family, organizational, and community health. As per Coalition of National Health Education Organizations, the Code of Ethics provides a framework of shared values within which Health Education is practiced.¹⁴

Social media is used for health education for various groups using audio-video and chat. These are helpful in discussing topic such as shame, taboos, myths, and religious beliefs of various domain.^{15,16} In many countries radio is used to combat communicable diseases. In Africa, radio spots or advertisements are used to combat malaria and for Diarrheal Disease Control in Swaziland, HIV/AIDS and hypertension in South Africa, AIDS in Zambia, Family Planning on the Contraceptive Behaviour of Women in Tanzania, hygiene, bonded labour, street children, and violence against women in Haka-Haki Radio (Radio Face-to-Face), Radio Nepal, Hepatitis and TB in Radio China, social mobilisation in Radio Candip, Zaire, Combating anti-vaccination rumours: lessons learnt from East Africa, Maternal and child health in BBC, question and answers in Kothmale Community Radio, Sri Lanka, for nutrition education in the Phillipines etc.¹⁷ Community Radios play an essential role in the process of reassigning the notion of health risk, based on their own life experiences in greater São Paulo.¹⁸

In 1956, the "Maharashtra Radio Forum" project was carried out in India. The purpose was to determine if radio forums would work in India with rural audiences who were largely illiterate, rarely exposed to radio, and unused to organized group discussion. From the evaluation results, it was concluded that forum members learned a great deal more than non-forum members. In amount of knowledge gained, illiterates did as well as literates.¹⁹ The FM, community broadcasting in Peshawar even has the potential to be used for entertainment purpose. And

because it does not have the visual distractions of television, which requires both one's eyes and ears to be engaged, low cost educational programming can form an informational/educational background that can complement household, manual, and academic work. In short, FM radio can complement more traditional forms of educational delivery.²⁰

There were 238 CRS in India (31 in TN) as on 24.08.2018.²¹ Indira Gandhi National Open University has been allotted 40 FM radio stations from which to broadcast educational programmes for the benefit of students and general public in India. These FM radio stations, delivered through the Gyan Vani network, cater to learners seeking to gain knowledge in the areas of basic, primary, higher, and extension education.²²

Radio Health by NHM Kerala FM broadcast since 2008 to entire Kerala in various health domains such as Life Style diseases (Cardio Vascular diseases, Diabetes, Stroke), Communicable diseases (Dengue fever, Leptospirosis, Malaria), Accidents & Trauma, Mental Health (Depression, Substance abuse and Alcoholism) and Old age diseases. Initially broadcasted from Trivandrum district through the FM station of All India Radio (Ananthapuri FM, 101.9 Mhz) four days per week, it has now spread across the entire state covering all districts, every day in Trivandrum district and on five days per week in other districts.²³ Thendral FM 91.2 Mhz aims to engage the surrounding fishing communities, schools, business and other establishments in creating programs for them (by them) in Neelankarai, South Chennai. Thendral CR has been broadcasting programs on reproductive health, HIV/AIDS, health and hygiene, women's and children's rights, law and other educational topics.²⁴

NGOs, Universities, educational institutions can start community radio. Universities, Deemed Universities and Government run educational institutions will have a single window clearance by putting up cases before an inter-ministerial committee chaired by Secretary (I&B) for approval to run a community radio. In case of all other applicants, must get additional clearance from Ministries of Home Affairs, Defense & HRD (in case of private educational institutions) and frequency allocation by WPC wing of Ministry of Communication & IT and frequency allocation by WPC wing of Ministry of

Communication & IT. CRS shall be expected to cover a range of 5-10 km.²⁵

An analysis of the national media scene reveals that it is possible to reach approximately 65% of the Indian audience by at least one of the mass media channels ie either through Television, Cable, Newspapers, Radio, Magazines, Cinema or the fledgling internet. Majority of the respondents (65%) said that public service advertisements of health care have impact in some extent. And 82% said these advertisements have influence on public attitude and behaviour.²⁶

Implications: Medical students had opportunity to prepare various thematic radio presentations with the help of experts. The innovative tool can be sustained with the help of medical students from subsequent batches. Most importantly, people can access it free of cost whenever they visit the hospital. It may reach people up to 15km once we setup community radio after approval from INB Ministry.

Conclusion: FM radio is an effective medium for health communication. It is feasible to broadcast from community medicine department at Medical College level.

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