ABOUT AC Nielsen ORG-MARG Private Limited

Ownership

ACNielsen ORG-MARG is owned by VNU, an International Information Company. VNU is active in the markets for consumer and professional information in over a 100 countries, including most European countries, The United States, Canada, South Africa, and Asia-Pacific region including India. VNU employs around 40, 000 people and is a public company whose shares are listed on the Euronext Amsterdam stick exchange (ASE:VNU).

VNU acquired Nielsen Media Research, the leader in television audience measurement in the U.S and Canada in October 1999. This was followed in December 2000, by the acquisition of ACNielsen, which is a leading provider in customised research and retail audit data, television audience measurement and internet measurement services outside North America.

ORG-MARG is now part of the network of the ACNielsen network of companies, in over 100 countries and **ORG Centre for Social Research** is the social research division of ACNielsen ORG-MARG Private Ltd.

The Nielsen Advantage:

The Advantage that ACNielsen ORG-MARG has over all its competitors is that apart from having ISO 9002 certification for data management, it is simply the largest multi-disciplinary research organization in India, in terms of manpower and field network as well as being one of the oldest.

BACKGROUND

ORG [Operations Research Group], nearly four decades ago by Dr. Vikram Sarabhai and had notched up in an impressive array of projects, emerging in the process as a leading organization in the field of Development Research and Policy Planning. Four enterprising research professionals had created MARG in 1983, quickly established it as among the largest agencies in India. These two entities, known as the erstwhile ORG-MARG, was formed in 1995. Today, as ACNielsen ORG-MARG, the company is uniquely placed to leverage its leadership status in three of our functional divisions, viz. retail measurement services (where ACNielsen is the final word across over 100 countries), customized market research and **social research**, with free movement of professionals and knowledge across the three division based on client specific needs. Professionals with ORG-MARG include specialists in the areas of social sciences, economics, demography, statistics, urban development, transportation, agriculture and natural science, planning energy and environment, anthropology, industrial and chemical engineering, marketing management, communications and computer applications. ACNielsen ORG-MARG has total staff strength of more than 1600. the core staff comprises of a team of about 400 professionals and over 1000 trained field survey supervisors and investigators.

One of the major strengths of the ACNielsen ORG-MARG is its continuous concern and endeavour towards development of appropriate research designs and methodologies to study and explore particular dimensions of human behaviour, environment and social change, marketing practices and media trends. Working with a variety of methodologies, the attempt is to ensure that the final research design and the outcome is a holistic one. The specific areas where ACNielsen has made a pioneering contribution are social and environmental impact studies, system studies in urban development and water resources and communications strategy development, education studies, family planning and energy surveys, retail store audit, readership studies, social and techno-economic evaluation, new product launches, crop surveys, and forecasting and opinion polls.

ABOUT ORG Centre for Social Research (ORGCSR)

(A division of Nielsen ORG-MARG Pvt. Ltd.)

ORG Centre for Social Research (ORGCSR), which is the social research wing of this multinational company in India, has been actively involved in the social research field for over 40 years, covering a wide range of sectors, including population science, health and family planning, education, micro finance, rural development and poverty, and more recently, with the newest frontier, HIV/AIDS. In accordance to the name, which specifies it to be a research group, ORGCSR is not related to the implementation of any projects. It only undertakes the projects of conducting surveys for conditional analysis and studies that are related to the evaluation of any of the development related programmes, implementation and its impact/outcome.

ORGCSR is considered the standard bearer in the field of commercial Social Research in the country, not only by the various Central Government Ministries, but also by many state governments where we have our branches, and also by most of the NGOs who have been funding research endeavours in the country over the past few decades.

ORGCSR today offers services in almost all fields of development planning and management, from the conceptualisation to final implementation.

The main strength of the organization is its array of professionals with multi-disciplinary expertise, including sociology, anthropology, economics, demography, population sciences, statistics, nutrition, education, geography, agriculture, psychology, urban/regional planning, rural development, agricultural, natural resource management, energy, forestry, environment, management, rural marketing and bio sciences.

Some of their note-worthy pioneering achievements include:

- First Child Labour estimation in India 1983
- First Doctor/Hospital Census 1996
- First Rural Household Panel 1998
- All-India Family Planning surveys 1970, 1980, 1990
- First National Baseline Behavioural Survey 2001

1. Sectoral expertise

Over the years, ORGCSR has developed expertise in survey methodologies in the following sectors:

- Health, AIDS, Nutrition and Family Planning
- Population and Development
- Education
- Social Security and Welfare
- Gender Issues
- Income Generation and Rural Development
- Social Communication
- Environment and Natural Resource Management
- Micro Planning and Enterprise Development

2. Research methodology

Our research methods involve specially developed techniques in areas such as:

- Quantitative research
- Qualitative research
- Participatory Rural Appraisal
- Participatory / micro planning

Considering its expertise in social systems research, ORGCSR is recognized as the WHO collaborative centres. It has set up the Sexual Health Resource centre [SHRC] for DFID, in India. Also it has been actively assisting other nodal national and international agencies like DNES, NDDB, IDRS, UNICEF, SIDA, CIDA, ILO, USAID, The WORLD BANK, DFID,/ODA, WFP, UNDP, etc.

3. Wide range of studies

ORGCSR is the largest multi-disciplinary social research unit in the subcontinent, both in terms of staff-strength as well as in terms of its areas of operations. The vast area of the experiences in terms of studies ranges across the key development sectors:

- Health and Family Welfare
- Rural Development
- Water supply and Sanitation
- Natural resource management
- Education
- Women and child development
- Energy and forestry

- Agriculture and Agri business

4. Largest office network in the sub-continent

The core professional strength comprises a committed team of professionals; most of them are from top national / international institutes, with years of professional experience behind them. These professionals include nationally reputed specialists in the areas mentioned above. They are located at the following centres in India:

Bangalore	*Hyderabad*
Baroda	*Kolkata*
Bhubaneswar	*Lucknow*
Chennai	*Mumbai*
	New Delhi

5. Funding

The ORGCSR has a wide range of funding organizations as according to its wide range of work/ project engagements. The major funding organizations are:

National AIDS Control Organization,
MACRO International and IIPS, Mumbai
Population Service International, Mumbai
Ministry of Health and Family Welfare
Family planning foundation of India
Comptroller and Auditor General of India
UNICEF
Director General of Audits

National AIDS cell organization

Public Affairs Centre, Bangalore

World Health Organization

Ministry of Consumer Affairs

Internship plays a vital role in the overall development of the learner. It provides an opportunity to strengthen the skills and acquire more knowledge in the area/issue where learner is interested. Internship provides a unique opportunity unlike fieldwork, because it exposes learner to the real work situation, equips the learner with advanced practical skills, and confidence to conceive and undertake independent work and tasks/activities in future. Intensive classroom teaching focuses on values and knowledge base of social work interventions, and on the other hand the structures field practicum emphasizes on building and enhancing the social work skills that is necessary for such interventions. I was placed at ORG Centre for Social research, a division of the Nielsen ORG-MARG Pvt ltd, which is a leading organization in the field of Social Research, for a period of three months, where I was engaged in various types of research projects. This comprehensive report highlights the work done by the learner during her internship period from 1st February, 2010 to 30th April, 2010.

ORG Centre for Social Research is a premier, a well known organization and a leading group in the field of social research, which is committed to its concept, practice and approach.

Activity 1 Understanding the Agency:

To start with any kind of work, an in-depth understanding of the agency is required. This knowledge of the agency would help to understand the working of the research group and choose the areas where I would be working and learning the maximum, acquire practical knowledge, skills and attitude. This understanding would not be just limited to the agency but also to the outreach activities it undertakes in the field, their terms with the different clients in relation to the projects.

Task 1.1.Getting acquainted with the agency, supervisor, and staff members:-

In the initial stage I had discussion, and interaction with the agency staff members, asking about the agency, and the various initiatives of the organization. Basically this task was done to build a rapport with the supervisor and the staff members so that I can feel free to work and create a friendly environment for work.

Task 1.2 Gathering information from the other key functionaries of the agency:-

I was engaged in meeting and discussion with various staff members and the different initiatives and the key functionaries of ORG-CSR and asked about their projects including past and the present, their client groups, what are their approach, strategies, etc. so as to understand the working strategies of the agency.

Task 1.3 Familiarize with past and ongoing programmes and activities of the agency:-

This task was basically done in order to know about the activities/projects which the agency has already done and the ongoing activities so as to help learner in understanding the project where she can work..

Activity 2 Preparing internship work plan:-

A tentative work plan was prepared.

Task 2.1:- Discussion with agency supervisor:-

. The agency supervisor briefed learner about the agency, its evolution, its areas of work, past experiences, where they are engaged and the ongoing projects or programmes.

Task 2.2 A tentative plan of action:-

After discussion with the agency supervisor and getting familiarized with the agency and its staff members, I developed a tentative plan for work. I was initially asked to read and understand the ongoing projects.

Activity 3 Concurrent Evaluation of Red Ribbon Express (RRE), 2010

I had a chance to attend TOT (Training of trainers) of RRE, a project of UNFPA and NACO in Delhi office. This meeting of professionals from the field offices of ORGCSR helped me to have

an overview about the nature of work followed in the organization. Though I was not involved with this project, it was a good exposure and learning.

Activity 4 Baseline Condom Promotion Impact Survey, NACO:-

I was fully involved in this study from the initiation step towards this project. The objectives of the baseline CPIS are to assess the current level of knowledge, attitude and practice indicators of the target group (15-49 years) with regard to condom; and to determine the current levels of social marketing brand preference, availability and access to condoms. The secondary objective of CPS is to assess the reach/exposure of the target group to various communication/BCCC campaigns on condom promotion. This is one of the ongoing projects of the ORG-CSR which is in its initial stages. I was involved in this initiative so as to gain experience of the preparatory stages of the research project that takes place prior to the field survey. The following tasks have been undertaken by the learner for activity 3.

Task 4.1 Understanding the project CPIS:-

I thoroughly understood the project of the CPIS by having all the details and having discussions with the staff personnel who are in the team. The project's research methodology uses Structured Interviews from men and women of the target population group.

Task 4.2 Orientation meeting of the Professionals (TOT):-

The training of trainers that was held on 7th and 8th of April 2010 is an essential activity to maintain a common understanding among all the professionals. It was a two days intensive training programme held in Delhi which was attended by all the zonal coordinators and field executives along with the project managers. Training was conducted by the team leader (CVS Prasad) and the core team members (Mr. Pramod Padhy, Mr. Niharendu). The concerned official from NACO, Mr. Pramod Bhatt had also attended and participated in the ToT. During this two days schedule of the training programme, the men and women questionnaires developed for the study and the research methodology were discussed in detail. The field executives shared their experiences and the challenges they face while working in the field. These experiences are necessary to be kept in mind while preparing the Interview schedules as this study deals with

quite sensitive issues which are still not discussed very freely in Indian society like condom use during sexual intercourse, HIV-AIDS etc.

Task 4.3 Review and Editing of the Questionnaires:-

In accordance with the discussions and results of the ToT, I along with the other team members participated in the reviewing and editing of the questionnaires for men and women. The suggestions and comments of the field executives and the trainers were incorporated as the questionnaires were ready for the pre-testing.

Task 4.4 Pre-Testing of the Questionnaires:-

In order to ascertain the suitability of questionnaires in actual field conditions, all the instruments are pre-tested (with respect meaning of the questions, language, terminology etc.) in the field by the professional and the executives involved in the study. The pre-testing was decided to be done in four states: Andhra Pradesh, Delhi, Orissa and Uttar Pradesh. Learner, now being a part of the project went to the field for the pre-testing. The area selected for the purpose was the Nehru Camp slum of Pandav Nagar, Patparganj, New Delhi. The task of the day for the learner was to conduct interview sessions with two samples of men and women each with the questionnaires of men and women respectively. Simultaneously the pre-testing was going on in the other three states.

The second stage of this task was to incorporate the results of the pre-testing in Delhi and the feedbacks of the same in A.P, Orissa, and U.P in the final questionnaires. In addition to this a report of the results of the pre-testing was prepared to be sent to the NACO office.

Task 4.5 Sample Selection:-

The next stage of this process was sample selection. The selection of the sample districts, villages and urban wards was done centrally, i.e. in Delhi office according to the State wise data of the census 2001. The method used for the sample selection was Random Sampling, a sub-method of the Probabilistic methods of sampling in quantitative research methodology. The sample list prepared had the following components: State name and code; District name, type and code; Sub-District/Town name, type and code; PSU (village/ward) name, type and code; total number of households and population; and the schedule numbers.

Throughout the period of internship, the learner was involved the preliminary stages of this research project: ToT, sampling, tool preparation and field planning.

Activity 5 Training in Lucknow: MLE Project-Phase 2 (SDP interview)

Learner was involved in training of investigators in Lucknow for 10 days under the guidance of the team from ORGCSR. For the first few days, she observed and developed the idea and strategy to train field investigators involved in the survey. After reaching the comfort level, she took part in the training sessions and demonstration sessions. It was a real learning experience as dealing with the field level personnel involved in any type of study helps in gaining knowledge and also exploring more experiences from which learning can be extracted.

Task 5.1 Understanding the project

Task 5.2 Participation in the training sessions

Task 5.3 Involved in modifying the questionnaire after the training sessions

Task 5.4 Participated in demonstration interviews and mock calls

Activity 6 Evaluation studies on the consumption of adequately iodized salt: the Micronutrient Initiative India (MII)

The Micronutrient Initiatives India (MII) is supporting the Universal Salt Iodization (USI) programme in the states of Andhra Pradesh, Gujarat, Orissa, Tamil Nadu and Rajasthan wherein MII works at the production level to build capacity of the salt processors to produce adequately iodized salt. The MII has been working on supply side intervention since last 5 years and during this period the capacity of salt industry has improved substantially. Increased production and supply of adequately iodized salt along with, increased consumers purchasing power and concerned consumer awareness would have improved the level of consumption of iodized salt at household level.

The MII proposes to conduct a household level study to assess the level of consumption of iodized salt at household level in rural areas of 8 states in India, where the level of consumption of iodized salt at states level was lower than the all India NFHS III average. Towards this end, the MII has asked for a study proposal from ORG Centre for Social Research (ORG CSR – a division of AC Nielsen ORG MARG Private Limited).

Task 6.1 Understanding the project CPIS

Task 6.2 Finalizing the questionnaire

Task 6.3 Prepared sampling design

- Apart from the above mentioned studies, I was involved in the finalization of the reports of the already completed studies. Full involvement in any of the projects helped me to take the responsibilities and become improve my skills in the field of Research.

Learning and Experiences at ORG Centre for Social Research:-

The experience of working in ORG CSR was an enriching experience. I had a chance to learn and gain exposure to the entire limit possible. Organizational culture helped me to grow and enrich my knowledge. Apart from the research methods and procedures, I got an opportunity to work with other professionals of Social sector as it is not the only trained health workers who work for the people and country's development. Such an experience helped me to enhance my skills in the work related to health sector. Thus, I could develop more competencies and enrich my skills of working in collaboration and cooperation with other professionals while being in a team. Also it was the first time experience that learner got involved in developing of interview schedules (questionnaires) and understood the various aspects required in doing so i.e. client demands, sensitivity of the issues, and the field related problems or challenges.

The expectations which I had from the organization in terms of supervision, coordination, and cooperation etc. went surpassed. Organizational culture and working environment was friendly and gave so much scope for me to learn maximum while in the organization and beyond. At the end I realized that it was a new learning and new experience ever since the day one till the end of internship at the ORG Centre for Social Research, a division of the Nielsen Company.

Chapter 1

Introduction

1.1Background

"mHealth involves using wireless technologies such as Bluetooth, GSM/GPRS/3G, WiFi, WiMAX, and so on to transmit and enable various eHealth data contents and services. Usually these are accessed by the health worker through devices such as mobile phones, smart phones, PDAs, laptops and tablet PCs."

mHealth is the use of mobile communication technologies as an integral part of healthcare delivery. Mobile phone is one of the fastest growing telecommunication infrastructure at both national and global levels. India is rapidly growing in terms of technology and communication. Mobile phones, the Internet, and handheld computers or personal digital assistants (PDAs) can offer the low cost per-person-reached that is typical of broadcast media.

Mobile phones and other information and communication technologies offer new interactive opportunities for health communication, and they cost little per person reached. New technologies such as cell phones and websites are being investigated for the new opportunities.

Key Applications of mHealth

- Education and awareness
- Remote data collection
- Remote monitoring
- Communication and training for healthcare workers
- Disease and epidemic outbreak tracking
- Diagnostic and treatment support
- Education and Awareness

Some Successful Projects:

- Freedom HIV/AIDS Project –India
- Learning About Living –Nigeria
- HIV/AIDS Video Distribution by Mobile Phone –Georgia
- HIV Confidant -South Africa
- Project Masiluleke -South Africa
- Text to Change (TTC) –HIV Prevention through SMS Quiz –Uganda
- Tamil Nadu Health Watch-India



Figure 1.1: Applications of mHealth

64% of all mobile phone users are in the developing world. The latest report by the Telecom Regulatory Authority of India states that India has a Tele-density of Wireline 52.74% and the telephone subscribers increased to 621.28 Million at the end of March-2010 from 600.98 Million in February-2010, thereby registering a growth rate of 3.38%. Mobile phone is the fastest-growing technology in the developing world. Wireless subscriber base increased from 564.02

Million in February-2010 to 584.32 Million at the end of March-2010 registering a growth of 3.60%. Wireless Tele-density stands at 49.60%. When compared year-wise, the growth trend is shown below in the graph. By 2012, half of all individuals in remote areas of the world will have mobile phones.

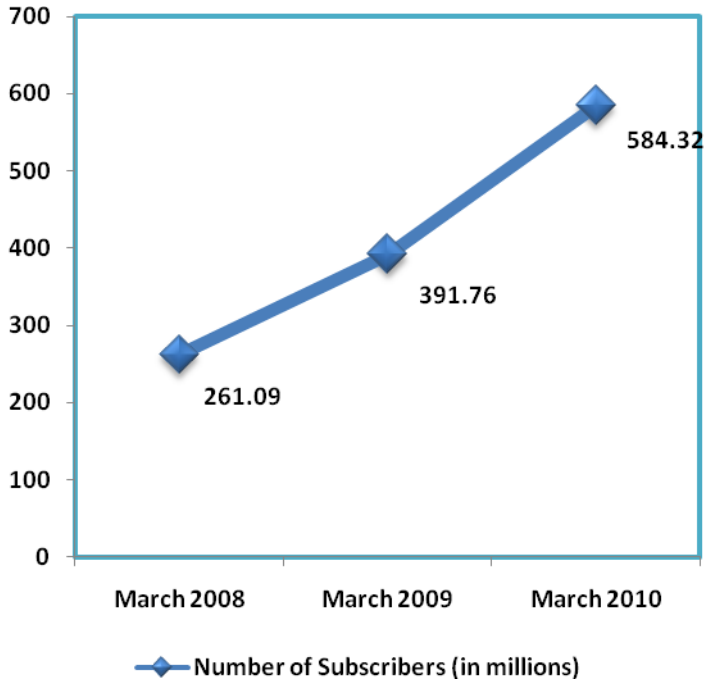


Figure 1.2: Growth trend of mobile phones

Mobile messaging services are extremely popular and growing, with mobile phone users sending over two trillion messages annually worldwide. They may provide for transmitting messages to help improve family planning and other health behaviors. Mobile phones cannot yet offer as much content as computers, but they are widely used and they go almost everywhere. It can be used to advertise and promote the health messages. Short Message Service (SMS) technology has been used to provide health-related information directly to users.

This underlines the importance of using the mobile phone as an innovative tool in reaching targeted communities. Phones can be used for much more than making calls and sending text messages; they can be powerful tools to help people improve their health.

In light of the high unmet need for family planning and reproductive health information, there is a significant potential to help women avoid pregnancy and improve their reproductive health by providing them with timely, actionable, personalized information through Short Message Service (SMS). These messages can be easily read and understood and can be received at anytime and anywhere. Advances in the technologies that underlie mobile phones are enabling them to become better, faster, and less expensive. Technologies intended to be used for health-related purposes should be useable by all types of individuals, including the elderly, people with low literacy, and those with permanent or temporary disability.

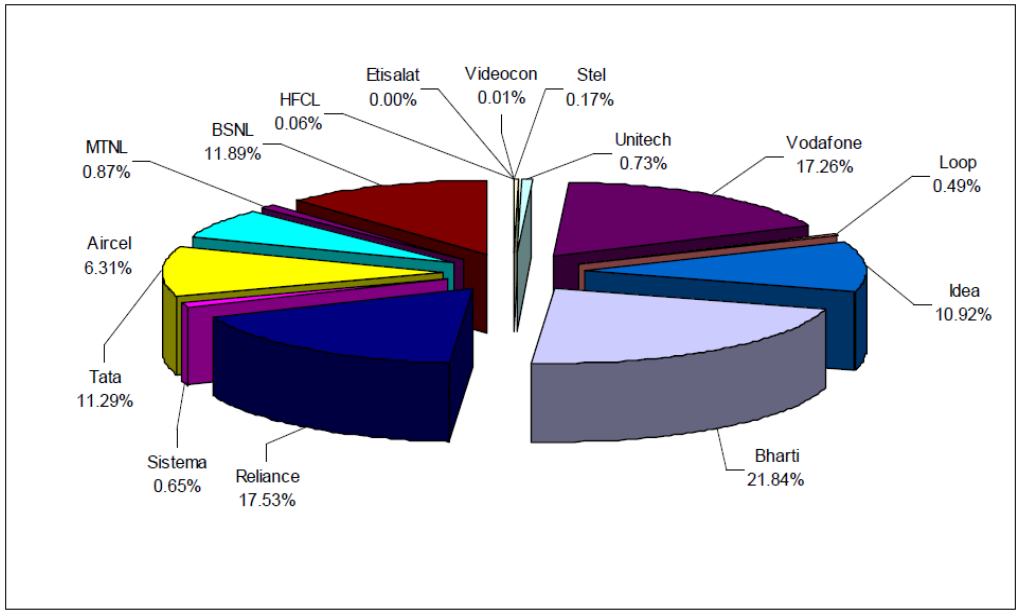


Figure 1.3: Share of service providers

The above figure shows that Bharti and Vodafone are the highest preferred service providers. This indicates that preferred service providers can be used as stakeholders to deliver messages on health through mobile phones.

Need of the study

The growth of cell phone use, particularly in the developing world is providing health experts with a new channel of communication to provide family planning information. There is growing interest in the health sector on the uptake of mobile communication. The United Nations Population Fund (UNFPA) notes that future population trends will hinge on the fertility decisions of today's men and women aged 15-24 and on their ability and freedom to act on those decisions. Because of the young age-structure of India's population, the reproductive attitude and behaviour of teenagers are likely to have an important impact on overall reproductive health, demographic and social outcome. This study aims at assessing the availability and usage of mobile phone text messaging / short messaging service (SMS). The study also explores the awareness and exposure of the target respondents to any health messages. It will focus on developing potential of using health messages through SMS among the mobile users as technology integration within the health sector has great potential to promote healthy lifestyles, improve decisions and enhance healthcare quality. This can also help reduce the health care cost. The study also provides future recommendations for emerging trends to promote family planning messages by using mobile technology.

This study focuses on exploring the potential of mobile phones in improvement of delivery of health messages. The study was carried out using quantitative research Technique. The subsequent sections of the report are based on the results of the same.

1.2 Objectives of the study

The study set out to accomplish the following specific objectives:

1. To estimate the availability and user-ship of mobile phones among the college going students

2. To determine the extent of exposure and attitude towards Health Messages

3. Assess the potential of using mobile phones for delivery of Health messages

4. Provide current scenario of mHealth and Propose future recommendations for improving the communication strategy to the target respondents

1.4 Methodology

1.4.1 Geographical Coverage

The study was conducted in Delhi state. A representative sample of the target respondents was contacted for the study.

1.4.2 Target Respondents

In view of the objectives to be covered, the following target respondents were identified:

- College going Male and Female students in Delhi

1.4.3 Research Techniques

A Cross-sectional, questionnaire-based research tool was developed and used for this survey. The study adopted both quantitative and qualitative research techniques to elicit the required information. The research technique using structured questionnaire was canvassed to capture the respondent's perspective about information related to health through mobile phones. In-depth discussions were also held with some of the respondents.

Quantitative Research Technique: All the eligible respondents were contacted for the survey at different locations in Delhi and structured questionnaires were used to interview the target respondents. A draft questionnaire was developed and discussed with the mentors. The final study tool was prepared after their comments and feedback.

Qualitative Research Technique: In-depth interviews were carried out with some of the respondents contacted for the survey to obtain an insight and determine their perceptions and opinions about different media to access health messages and how mobile phones can be utilized

in delivering health information. The discussion was held in order to prepare key recommendations focusing on exposure to health messages.

1.4.4 Sampling

Sample Size: The sample size for the survey was determined after discussion with the mentors. In view of the time constraints of the study a **s**ample of 100 eligible respondents from various disciplines were covered for the study. The students of Health Sciences were not included as they may know the various health messages. The eligible males and females were selected randomly.

1.5 Research instruments

As mentioned above, the following research tools were developed and used for the survey:

A. Quantitative survey tool: A structured Questionnaire

B. Qualitative survey tools: In-depth discussion guidelines

All research tools were developed in consideration with the objectives laid down for the study. The questionnaire was finalized in consultation with the mentors and their feedback has been incorporated. After finalizing the questionnaire, it was pre-tested in order to check the language, flow of questions and necessary skips. The tool was modified accordingly and finalized.

1.6 Fieldwork

The crucial component in the social survey is the proper fieldwork. The fieldwork was carried out in Delhi state at various locations. Around 8 different book stores were chosen according to masses they cater and interview was conducted with the students studying in colleges of Delhi. In-depth discussions with the students were also undertaken.

The role and responsibilities during the fieldwork:

- Locating the bookstore and identifying the eligible respondents
- Seeking informed consent from the respondents conducting the interviews

- Interviewing the respondent using the questionnaire
- Checking completed interviews to be sure that all questions were asked and the responses are neatly and legibly recorded

1.7 Data processing and analysis

MS-Excel was used for data entry and analysis. Before data entry, each and every questionnaire was scrutinized with respect to completeness and consistency of the questionnaires. The scrutiny and coding of the questionnaires was initiated and in-house data entry was started in ORGCSR Delhi as soon as the field work was over. Once the data entry was over, data was checked manually for its completeness, correctness and consistency in a systematic manner and excel sheet was checked accordingly. The analysis/tabulation plan was prepared under the guidance of mentors in ORGCSR.

Chapter 2

Profile of Respondents

As discussed in the first chapter the respondents for the present study comprised of college going students. Details pertaining to the individual background characteristics are presented in this chapter. In this section, some background characteristics of the respondents are described. All the respondents covered under the study were studying in colleges of Delhi and belonged to varied backgrounds. Respondents from different backgrounds were included so as to capture the study objectives in terms of health messages and also help them getting aware of the different health topics.

2.1 Gender

Among all the respondents contacted for the interview, there was a variation in the number of college students according to gender perspective as no specific sampling was followed for number of male and female respondents. Overall, the number of female students was higher than male students. About 59 percent respondents were females and 41percent were males.

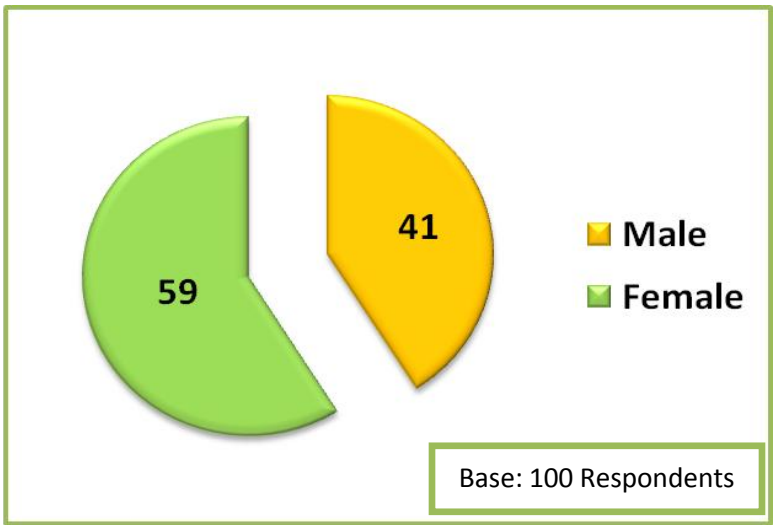


Figure 2.1: Gender wise distribution

2.2 Age group

Table 2.1 presents the age group distribution of the respondents. Analysis was done by classifying the age group into two categories i.e. 17-21 years and 22-26 years. Overall 58 percent respondents were from the younger age group (17-21 years) and 42% were from the 22-26 year age group. The age of more than half (56.10%) of the male respondents was between 17-21 years age group followed by 40.68 percent of females falling in to this category. This percentage was reported higher in females (59.32%) in the 22-26 year age category compared to males (43.90%).

2.3 Educational status

Figure 2.2 shows that the educational status of the eligible respondents. Overall 70 percent of the respondents were studying at undergraduate level and 30 percent at PG level.

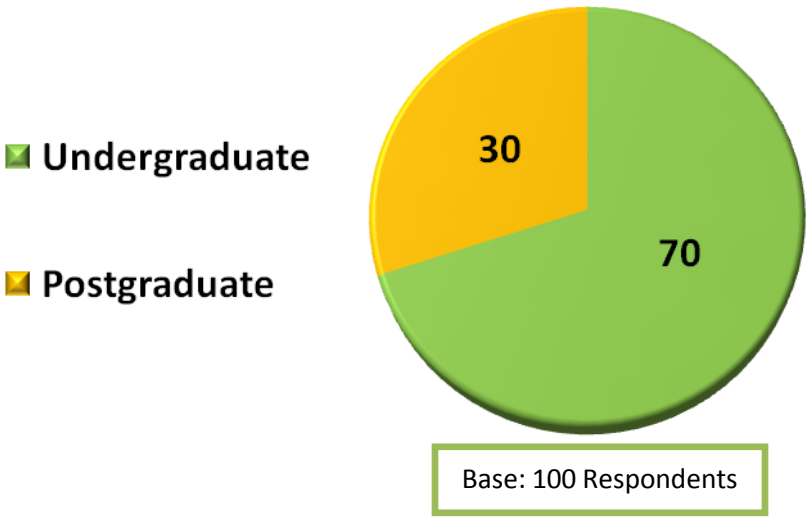


Figure 2.2: Distribution by educational status

2.4 Accommodation Type

In all 50 percent respondents were living with their family (table 2.1). About 58.54 percent males and 44.07 percent females reported to be living with their families in Delhi. The remaining proportion reported that either they were living in hostels or PG. This shows that a large proportion of the respondents studying in Delhi colleges were not living with their parents/family.

2.5 District wise location of college

As regards the district wise analysis of the students studying in different colleges, majority were studying in the colleges of East Delhi (25%) followed by West Delhi (22%). The proportion of the eligible respondents from three districts namely New Delhi (15%), North Delhi (14%) and South Delhi (16%). A small proportion of the students also reported to be studying in the North West Delhi (8%).This distribution is shown below in the graph.

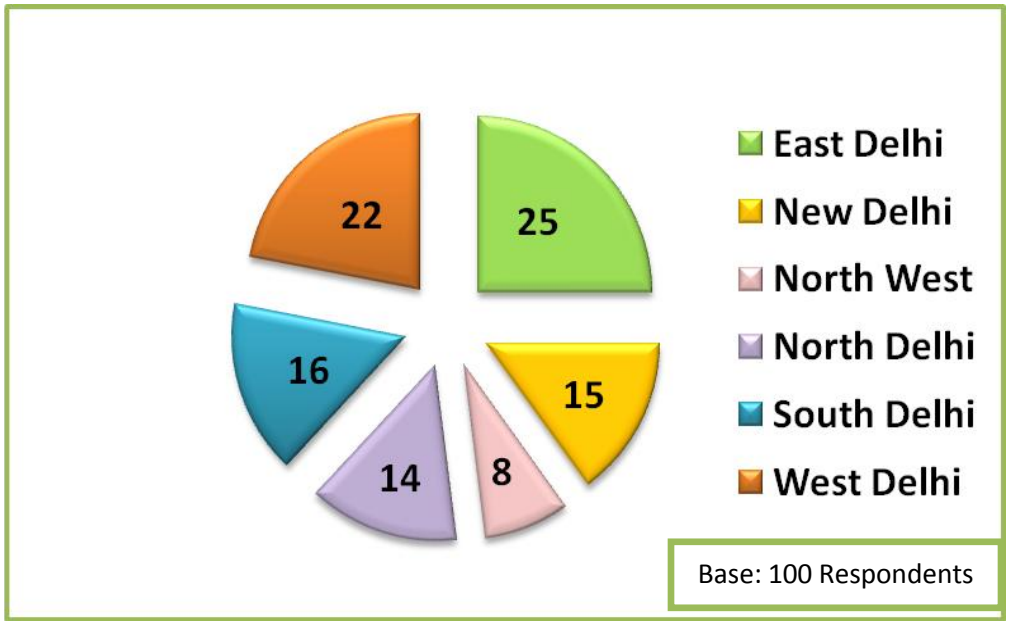


Figure 2.3: District wise distribution

2.6 Religion

More than half of the respondents were Hindus (54%) and this proportion was almost similar in both males and females. About 24.39 percent of males and 18.64 percent females were Muslims. Approximately 16 percent respondents were analyzed as Sikhs. Christians were reportedly higher among females (10.17%) as compared to males (2.44%). About 4.88% male respondents belonged to other religion.

Table 2.1: Background characteristics of the respondents

Background characteristics	Percentage of respondents	Male	Female
Age			
17-21 yrs	58.00	56.10	40.68
22-26 yrs	42.00	43.90	59.32
Accommodation Type			
Staying with Family/Residence	50.00	58.54	44.07
Staying in hostel	30.00	21.95	35.59
Staying in PG	20.00	19.51	20.34
Religion			
Hindu	54.00	53.66	54.24
Muslim	21.00	24.39	18.64
Sikh	16.00	14.63	16.95
Christian	7.00	2.44	10.17
Others	2.00	4.88	0
Total (N)	**100**	**41**	**59**

Chapter 3

Availability and User ship of mobile phones

As telecom industry is growing and is being utilized in the health initiatives, mobile phones have also started playing a crucial role in this context in spreading awareness etc. In Indian context, the current scenario shows that ownership of cell phones are increasing at a rapid pace. This chapter provides an overview of the ownership of mobile phones in the selected college students and is also aimed to determine the different areas for which the mobile phone is used by them. Respondents were asked about their reasons for using mobile phones and their current service provider was also asked in the interview. Various responses were coded during the interview depending upon the availability of features in the mobile phone owned by the respondents. Their response varied according to mobile phone and the service provider they were using. Analysis was done in order to know the current pattern for which the mobile phone is being used by the literates in an urban setting.

3.1 Ownership of Mobile phones

The information on ownership of mobile phones is presented in Table 3.1. Among all the female respondents, about 94.92 percent owned a mobile phone. This proportion was slightly lower in males (92.68%). As regards owning a mobile phone the overall proportion was higher among males and females because of the urban setting of the study and increasing popularity of mobile phones especially in young population.

Table 3.1: Proportion of respondents who own cell phones

	% of respondents	
	Male	**Female**
% of respondents owning cell phone	92.68	94.92
Total (N)	41	59

3.2 User ship of mobile phones

Respondents were asked about the purposes of using mobile phones and it was observed that of the total respondents having a mobile phone, all the respondents were using their phones for *talking* with others and *messaging* with others. This was due to the reason that mobile phones are mainly used for these two purposes in general. Playing games was noted as the most sought purpose after the above two features in males (63.16%) than in females (53.57%). In females, music player and camera were more popular than in males as shown in the figure 3.1.

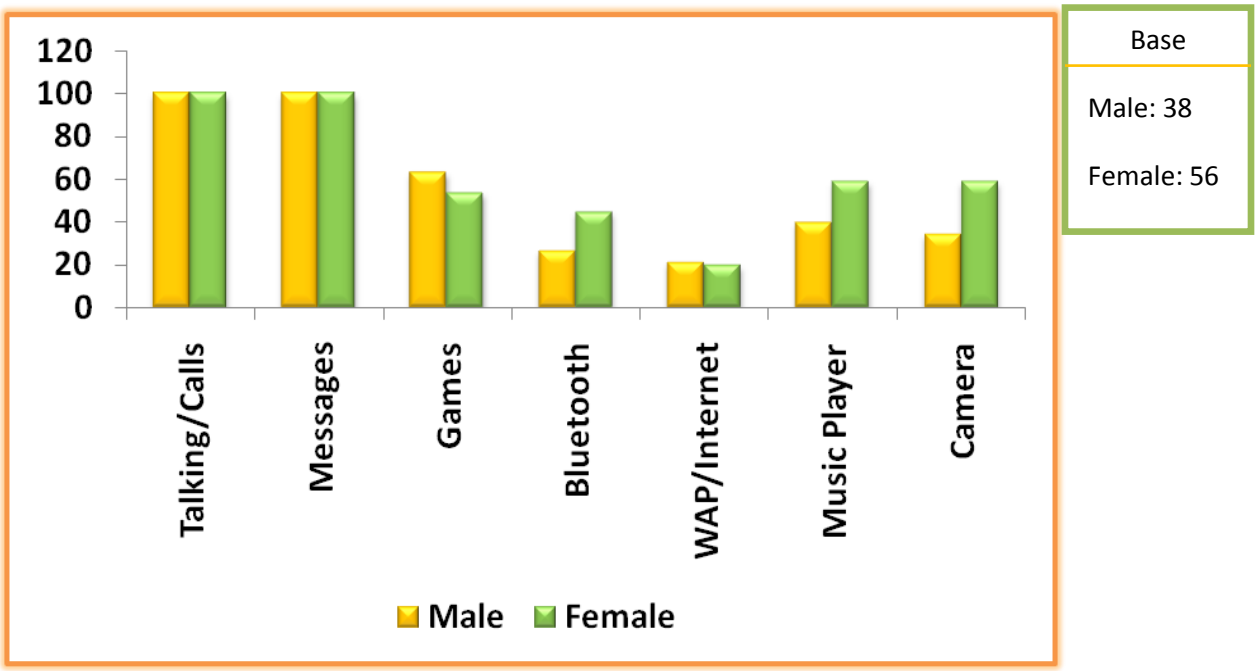


Figure 3.1: User ship of mobile phones in the respondents having mobile phones

3.3 Service Provider

Among all the females having the cell phone, the most popular network provider was Vodafone (39.29%) followed by Airtel (21.43%) and Idea (14.29%). The proportion was similar for Reliance and Tata Indicom networks (10.71%). Similar analysis among the males having mobile phones showed that Airtel (31.58%) was in highest proportion followed by Idea (23.68%), Tata Indicom (15.79%), Reliance (15.79%) and Vodafone (13.16%). This revealed the difference in preference of network selected by the respondents when analyzed gender wise.

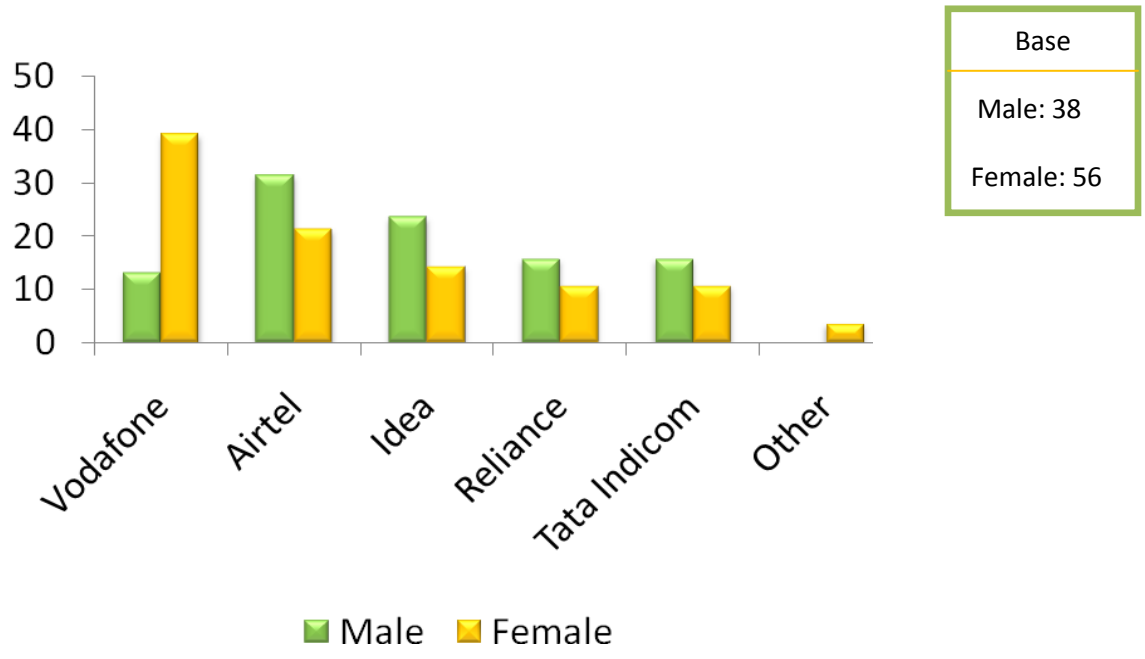


Figure 3.2: Service provider of the respondents

Chapter 4

Potential of mobile phones

Mobile phones have made a recent and rapid entrance into many parts of the low- and middle-income world, with the global Mobile phone penetration rate drastically increasing over the last decade. Improvements in telecommunications technology infrastructure, reduced costs of mobile handsets, and a general increase in non-food expenditure have influenced this trend. Low- and middle-income countries are utilizing mobile phones as "leapfrog technology" (see leapfrogging). That is, mobile phones have allowed many developing countries, even those with relatively poor infrastructure, to bypass 20th century fixed-line technology and jump to modern mobile technology. In India, for example, while mobile penetration rates have increased markedly, by far the greatest growth rates are found in urban areas. Mobile phones are spreading because the cost of mobile technology deployment is dropping. Basic SMS functions and real-time voice communication serve as the backbone and the current most common use of mobile phone technology. The broad range of potential benefits to the health sector that the simple functions of mobile phones can provide should not be understated. The appeal of mobile communication technologies is that they enable communication in motion, allowing individuals to contact each other irrespective of time and place. This is particularly beneficial for work in remote areas where the mobile phone, and now increasingly wireless infrastructure, is able to reach more people, faster. As a result of such technological advances, the capacity for improved access to information and two-way communication becomes more available at the point of need.

More advanced mobile phone technologies are enabling the potential for further healthcare delivery. Smartphone technologies are now in the hands of a large number of physicians and other healthcare workers in low- and middle-income countries. The mHealth field operates on the premise that technology integration within the health sector has the great potential to promote

healthy lifestyles, improve decision-making by health professionals (and patients) and enhance healthcare quality by improving access to medical and health information and facilitating instantaneous communication.

The mobile phone has traditionally offered voice and data transfer tools to connect people. With improving capabilities and cheaper rates, mobile telephony is a domain that provides a powerful opportunity for innovation, and because it is subject to lower financial and educational barriers, it provides a potentially wider sphere of influence than the Internet has to date. An increasing number of pilot projects are testing mobile health applications across the globe. However, a strategic approach to scalable and sustainable mobile health activities could potentially reap greater financial and social rewards. Furthermore, within the context of development opportunities for the majority, because anyone can carry a mobile phone regardless of financial or social strata, it is the traditionally marginalized areas of society who can benefit most. The present chapter explores the potential of mobile phones to deliver health related messages. The respondents who owned mobile phone were asked further questions on their interest in use of mobile phones to get free SMS/text messages so that they become aware of various health topics.

4.1 Willingness to receive messages

The purpose was to determine the proportion of respondents who would like to receive these types of messages to have a better knowledge on health issues and also who want to participate in a free health message programme on health if commenced by the Government. This is indicated in the figure (4.1) shown below.

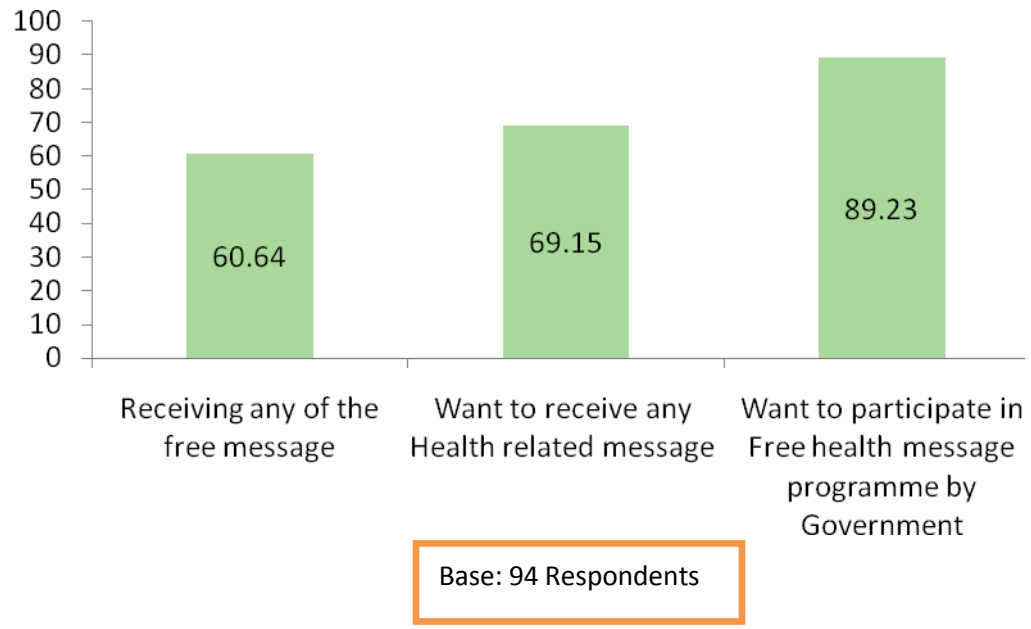


Figure 4.1: Willingness to receive messages

Of the total respondents having their own mobile phone, 60.64 percent reported that they were already receiving any type of free messages on cell phone. The above finding indicates that students had interest in receiving free messages on mobile phones which can be further used as a potential for delivering health messages. When the students were asked about their opinion that whether they would like to receive messages on health or not, a substantial proportion (69.15%) reportedly wanted to obtain these messages on cell phones.

The respondents were also asked about their willingness to take part in government's proposed free health message programme. A significantly higher proportion of the students (89.23%) mentioned their interest in the campaign if it would be commenced.

4.2 Attitude towards health messages

Respondents were asked about their preference on different types of health issues. All the options mentioned in the questionnaire were read out so that the students can reply with ease. As depicted in the figure 4.2 the highest proportion of respondents reported that they would like to have messages on HIV/AIDS (86.15%) followed by emergency contraceptives (73.85%) and information on recent health news (73.85%). About 70.77 percent of respondents wanted to have messages on condoms, followed by tobacco use (67.69%). For oral pills (63.08%), information on National Health Days (61.54%) and STDs (60%). This finding indicates that the target

respondents contacted for the study were keen to know more about HIV/AIDS, emergency contraceptive and regular updates on Health News.

Base: 65 Respondents

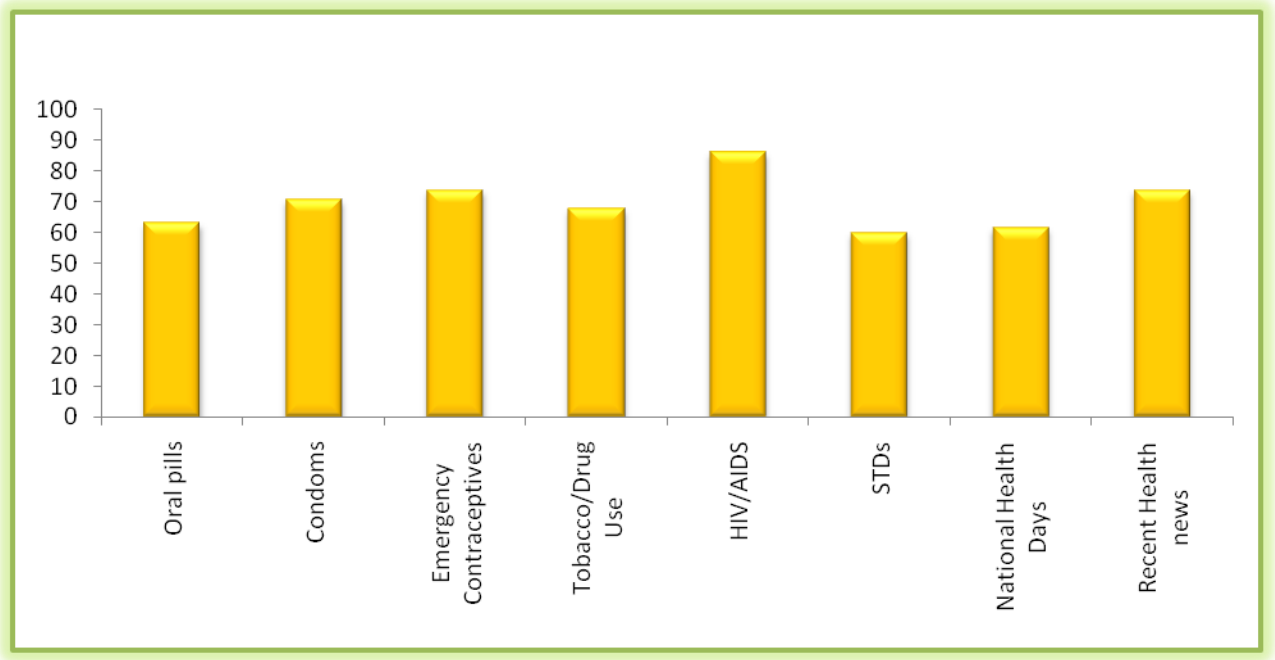
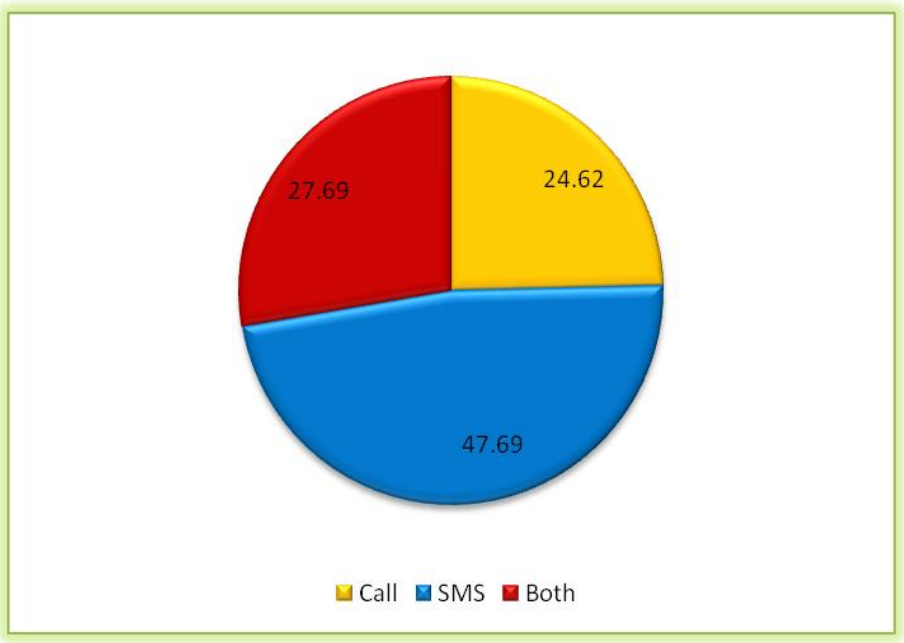


Figure 4.2: Attitude towards health messages

4.3 Preferred Mode for Communicating the Health Message

As regards the opinion on the type of mode which can be used to communicate the health messages on mobile phone majority of the respondents (47.69%) reported SMS can be a useful mode to obtain any type of health message as it can provide them proper privacy and help them gain information without any hesitation. Among all the respondents a substantial proportion (24.62%) reported that they want the messages via call on their mobile phone. This pattern is more or less similar for obtaining messages via both the modes i.e. call and SMS (27.69%).



Base: 65 respondents

Figure 4.3: Preferred mode of getting messages

4.4 Frequency of Messages

Table 4.1 presents the opinion of the respondents on the frequency to receive the health messages on mobile phones. Overall majority of the respondents (47.69%) preferred to receive the information through any mode at least once a month followed by once a week (26.15%) and at least once in six months (15.38%).

Table 4.1: Frequency of getting messages

Frequency To Receive information	% of respondents
At least once a week	26.15
At least once a month	47.69
At least once in 6 months	15.38
Total (N)	**65**

Chapter 5

Health Messages

Text messaging refers to the exchange of brief written messages between mobile and portable devices over cellular networks. SMS facilities on mobile phones were introduced in the early 1990s and now represent one of the most widely used methods of communication. Mobile phones were mentioned as an efficient and fast tool (often used by low-income people) of disseminating information. People are also willing to actively participate and share their views and information, including on health issues, by means of social networks. This explains the emergence of the new social media (blogs, chats, Twitter, Facebook, MySpace) that may become a strategic media in the near future. Websites were mentioned as widely used to convey health messages. The explosion of mobile use in developing countries is helping transform health care.

The present chapter aims to gain an insight into different types of health messages which respondents wanted to obtain through mobile phones. For each type of health topic, respondents were asked about the messages, first spontaneously, and then by prompting. Each issue was explored in this manner one after another.

5.1 Message on Oral Pills

The most spontaneously received messages in this regard were “different types of oral pills” (53.85%) followed by “advantages and disadvantages of oral pills” (46.15%), “danger/side effects” (43.08%) and “effectiveness” (40%). The proportion for “use of oral pills” (38.46%) and “outlets” (30.77%) were almost similar. The proportion of respondents who were ready to receive information on oral pills were further prompted. A significant proportion of respondents reported that they want to obtain messages on the following topics after prompting as mentioned

in the table below. In the regard, the highest proportion was observed for "use of oral pills" (32.31%) and "outlets" (32.31%) and lowest for "different types of oral pills" (16.92%).

Table 5.1: Receiving Oral pill messages

Particulars **(S= Spontaneous P= Prompted N= No)**	**Response**		**Total (N)**
About different types of oral pills available	S	53.85	65
	P	16.92	
	N	29.23	
Use of oral pills	S	38.46	65
	P	32.31	
	N	29.23	
Outlets to obtain	S	30.77	65
	P	32.31	
	N	36.92	
Danger signs/Side effects	S	43.08	65
	P	23.08	
	N	33.84	
Advantages and Disadvantages of oral pills	S	46.15	65
	P	20.00	
	N	33.85	
Effectiveness of oral pills	S	40.00	65
	P	20.00	
	N	40.00	

5.2 Messages on Condoms

Of the total respondents who wanted to have messages on condoms, different topics were asked and analysis was done accordingly. The messages spontaneously recalled by the respondents were "different types of condoms available" (60%) followed by "use of condoms" (41.54%). The proportion for other messages was almost similar as shown in Table 5.2.

Table 5.2: Receiving Condoms messages

Particulars **(S= Spontaneous P= Prompted N= No)**	**Response**		**Total (N)**
About different types of Condoms available	S	60.00	65
	P	10.77	
	N	29.23	
Use of Condoms	S	41.54	65
	P	30.77	
	N	27.69	
Outlets to obtain	S	36.92	65
	P	26.15	
	N	36.93	
Danger signs/Side effects	S	35.38	65
	P	35.38	
	N	29.24	
Advantages and Disadvantages of Condoms	S	38.46	65
	P	32.31	

	N	29.23	
Effectiveness of Condoms	S	38.46	65
	P	21.54	
	N	40.00	

5.3 Messages on Emergency contraceptives

As presented in the table 5.3, most spontaneously observed message was "different types of emergency contraceptives available" (60%) followed by "use of emergency contraceptives" (50%). For other messages, a high proportion of students responded after prompting the message. This indicates that if these types of messages are provided through free messaging service, the students would access and would show their interest to know the details. The highest proportion came out in the message "danger signs/side effects" (33.85%) after prompting.

Table 5.3: Receiving Emergency contraceptives messages

Particulars **(S= Spontaneous P= Prompted N= No)**	**Response**		**Total (N)**
About different types of emergency contraceptives available	S	60.00	65
	P	15.38	
	N	24.62	
Use of emergency contraceptives	S	50.77	65
	P	26.15	
	N	23.08	
Outlets to obtain	S	35.38	65
	P	30.77	

	N	33.85	
Danger signs/Side effects	S	40.00	65
	P	33.85	
	N	26.15	
Advantages and Disadvantages of emergency contraceptives	S	43.08	65
	P	27.69	
	N	29.23	
Effectiveness of emergency contraceptives	S	38.46	65
	P	16.92	
	N	44.62	

5.4 Messages on Tobacco use

Most of the respondents were keen to know about "harmful products of tobacco" (56.92%) in comparison to all the other messages. Across all the other categories, prompting was done in order to know their preference and interest towards tobacco use. This proportion was lowest for "cessation of tobacco products" (24.62%) spontaneously and lowest for "harmful products of tobacco" (56.92%) when prompted.

Table 5.4: Receiving Tobacco messages

Particulars **(S= Spontaneous P= Prompted N = No)**	**Response**		**Total (N)**
Harmful products of tobacco	S	56.92	65
	P	10.77	
	N	32.31	

Minimum age for use of tobacco products	S	33.85	65
	P	33.85	
	N	32.30	
Laws and regulations pertaining to tobacco	S	43.08	65
	P	23.08	
	N	33.84	
Danger signs/Side effects	S	41.54	65
	P	24.62	
	N	33.84	
Information on cessation of tobacco products	S	24.62	65
	P	29.23	
	N	46.15	
Latest trend on Tobacco and drug users	S	36.92	65
	P	20.00	
	N	43.08	

5.5 Messages on HIV/AIDS

When asked about HIV/AIDS, most of the respondents wanted to know more about the topic and thus this was reflected in their responses. The highest proportion was reported for "modes of transmission" (80%) and lowest proportion was reported for "HIV/AIDS counseling/ICTC centers" (40%) for spontaneous responses. This proportion was highest for "HIV/AIDS counseling/ICTC centers" (33.85%) for prompted responses.

Table 5.5: Receiving HIV/AIDS messages

Particulars **(S= Spontaneous P= Prompted N= No)**	**Response**		**Total (N)**
Modes of transmission	S	80.00	65
	P	4.62	
	N	15.38	
HIV/AIDS prevention	S	76.92	65
	P	7.69	
	N	15.39	
HIV/AIDS Management	S	69.23	65
	P	12.31	
	N	18.46	
Myths/misconceptions about HIV spread	S	44.62	65
	P	30.77	
	N	24.61	
HIV/AIDS counselling (ICTC centers)	S	40.00	65
	P	33.85	
	N	26.15	

5.6 Messages on STDs

When respondents were asked for the type of message they would like to have on STDs, the majority of them showed their interest as this was the area to which they were not fully exposed. The highest proportion reported 'modes of transmission" (50.77%) followed by "STD

prevention" (49.23%) and "myths/misconceptions about STDs" (46.15%) spontaneously. When prompted, the highest proportion was reported for "STD management" (29.23%). The proportion for other categories remained more or less similar.

Table 5.6: Receiving STDs messages

Particulars **(S= Spontaneous P= Prompted N= No)**	**Response**		**Total (N)**
Modes of transmission	S	50.77	65
	P	21.54	
	N	27.69	
STD prevention	S	49.23	65
	P	23.08	
	N	27.69	
STD Management	S	36.92	65
	P	29.23	
	N	33.85	
Myths/misconceptions about STD spread	S	46.15	65
	P	20.00	
	N	33.85	
STD counselling	S	38.46	65
	P	21.54	
	N	40.00	

Chapter 6

Exposure to Media

All the respondents irrespective of their ownership of mobile phone were included for this section and further interview was carried out with those who either had listened to radio in the last month or watched Television in the last month. The present chapter explores the exposure of the respondents to radio and television. In the subsequent sections, exposure of different health related messages on radio and television was measured.

6.1 Exposure to TV/Radio

As mentioned above, all the respondents contacted for the study were asked about their exposure to radio and television. During the interview all the respondents were asked to mention whether he/she listened to radio or watched television at any time during the last month. The analysis of the responses is presented in table 6.1.

Overall 50.77 percent of the male respondents watched television at least once during last month while about 70.77 percent female respondents watched television during last month. The proportion of females (53.85%) who listened to radio in the last month was higher when compared to males (38.46%). This finding reveals that female respondents were more exposed in context of media exposure.

Table 6.1: Media exposure to respondents

Indicators	Male	Female
Listened to Radio at least once a month (%)	38.46	53.85
Watched TV at least once a month (%)	50.77	70.77
Total	**65**	

6.2 Participation in radio contests

In order to understand the participatory behaviour of the respondents in contests on radio, few questions were asked. All the respondents who listened to radio in last month were further interviewed to determine their interest in contests related to health. Table 6.2 depicts the proportion of the respondents who listened and participated in contests on radio.

Of the total male respondents who listened to radio, the proportion who listened and took part in any contest on radio was almost similar (76%). More than half of them reported their participation in any health related contest on radio. When the same information was elicited for females, different trend was observed. About 71.43 percent of females listened to any contest on radio while only 54.29 percent of them took part in any contest. The proportion who participated in any health related contest on radio was lower than males.

Table 6.2: Participatory behaviour in radio contests

Indicators	Male	Female
Listened to any contest on radio (%)	76.00	71.43
Took part in any contest on radio (%)	76.00	54.29
Participated in any health related contest on radio (%)	56.00	40.00
Total	**25**	**35**

6.3 Exposure to health ads

6.3.1 Radio ads

Table 6.3 presents exposure of message on health through various advertisements on radio. The accessibility of radio ads by the target respondents is illustrated through the figure. It would be pertinent to mention here that all the respondents who were not exposed to radio or television during the last month were not included for this section. The highest proportion of respondents who heard any ad was observed for condoms (56.67%) and HIV/AIDS (56.67%) followed by emergency contraceptives (55%). The proportion of respondents who heard any ad on oral pills (41.67%) was significantly lower. This proportion was reportedly low for any tobacco ad (30%) and any ad on STDs (13.33%).

Table 6.3: Exposure to health ads on radio

Exposure to messages	**Radio (%)**
Oral pills	41.67
Condoms	56.67
Emergency Contraceptives	55.00
Tobacco/Drug Use	30.00
HIV/AIDS	56.67
STDs	13.33
National Health Days	18.33
Recent Health news	25.00
Total N	**60**

6.3.2 Television ad

In order to see the reach of health message through any media, radio and TV ads were asked specifically. Table 6.4 presents an overview about exposure of different health messages on television. The clear winner was emergency contraceptive (91.14%) on which the ads on TV were most popular. Ads on HIV/AIDS (86.08%) emerged to be the second most watched ads on TV. A high proportion of respondents reported that they have watched any ad on condom (83.54%) on TV during last month followed by ads on oral pills (72.15%) and ads on tobacco (68.355). Wide variations were observed for ads on Health days, Health news and STDs as reported by the respondents. There was a wide variation noted in the ads watched or heard by respondents on TV and Radio related to health. For radio, ads related to condoms and HIV/AIDS were the clear winners. For TV, emergency contraceptives ads were observed to be slightly on a higher side in comparison of condoms and HIV/AIDS.

Table 6.4: Exposure to health ads on TV

Exposure to messages	**Television**
Oral pills	72.15
Condoms	83.54
Emergency Contraceptives	91.14
Tobacco/Drug Use	68.35
HIV/AIDS	86.08
STDs	21.52
National Health Days	31.65
Recent Health news	54.43
Total N	**79**

Chapter 7
mHealth programs

This chapter presents an overview of mHealth programs associated with innovations in context to SMS/Text message. Mounting interest in the field of mHealth—the provision of health-related services via mobile communications—can be traced to the evolution of several interrelated trends. In many parts of the world, epidemics and a shortage of healthcare workers continue to present grave challenges for governments and health providers. Yet in these same places, the explosive growth of mobile communications over the past decade offers a new hope for the promotion of quality healthcare. Though the mHealth field is still in its early stages, it has already begun to transform health delivery. Projects throughout the developing world are demonstrating concrete benefits, including:

- Increased access to healthcare and health-related information, particularly for hard-to-reach populations
- Improved ability to diagnose and track diseases
- Timelier, more actionable public health information
- Expanded access to ongoing medical education and training for health workers

In 2008 alone, over a dozen new mHealth applications have been implemented or are in the trial stage. These include:

- InSTEDD, a US-based non-governmental organization (NGO) that provides technology solutions for humanitarian and disease support, opened a development center in Cambodia where mHealth-based disease and surveillance solutions are being designed for the Southeast Asian region

- The Canadian development agency, IRDC, expanded support for a project providing nurses in the Caribbean with portable digital assistants (PDAs) to empower improved diagnosis and decision making

- The United Nations Foundation and Vodafone Foundation Technology Partnership, together with the World Health Organization (WHO), a specialized agency of the United Nations (UN), announced plans to expand their mobile data-gathering program to more than 20 countries in sub-Saharan Africa

- The long-term goal is that such programs will make healthcare more effective, and have a demonstrable and significant positive impact on clinical outcomes such as reduced infant mortality, longer life spans, and decreased contraction of disease.

7.1 Defining mHealth

In recent years, mHealth has emerged as an important sub segment of the field of electronic health (eHealth). While there is no widely agreed-to definition for these fields, the public health community has coalesced around these working definitions:

- eHealth: Using information and communication technology (ICT)—such as computers, mobile phones, and satellite communications—for health services and information

- mHealth: Using mobile communications—such as PDAs and mobile phones—for health services and information

mHealth and eHealth are inextricably linked—both are used to improve health outcomes and their technologies work in conjunction. A growing number of developing countries are using mobile technology to address health needs. The mHealth field is remarkably dynamic, and the range of applications being designed is constantly expanding.



Figure 7.1 provides another view of the distribution of mHealth programs both geographically and by application area

7.2 Some mHealth programs

1) Project Masiluleke

Country: South Africa

Sponsoring Organization and Partners: Pop!Tech Accelerator, Praekelt Foundation, iTeach, frog design, MTN, Nokia Siemens Networks, National AIDS Helpline, National Geographic Society, Ghetto Ruff Records, Children of South African Legacies, Aricent

Under the guidance of an international, multidisciplinary team, the project provides a suite of interventions targeting the entire HIV/AIDS care continuum by promoting testing, treatment

connection/adherence and, ultimately, improved access to testing via an innovative home HIV test kit supported by mobile counseling. Project Masiluleke is currently sending one million text messages per day throughout South Africa that encourage people to be tested and treated for HIV/AIDS. By capitalizing on the ubiquity of mobile devices in even the most resource constrained areas, this project has the potential to revolutionize the public health response to HIV/AIDS in South Africa and other parts of the globe.

Messages are written in local languages, and are used to direct recipients to the National AIDS Helpline. Once patients have called, representatives of the hotline provide information about testing services and locations.

2) Text to Change (TTC)

Country: Uganda

Sponsoring Organization and Partners: Celtel, AIDs Information Centre (AIC), Merck, and the Dutch Ministry of Foreign Affairs

Text to Change (TTC) provided HIV/AIDS awareness via an SMS based quiz to 15,000 mobile phone subscribers during three months in Uganda. TTC was founded with the goal of improving health education through the use of text messaging, which holds the advantages of anonymity and strong uptake among the population. Partnering with the mobile carrier Celtel and the local NGO AIDS Information Centre (AIC), TTC conducted a pilot program from February through April 2008 in the Mbarra region of Uganda, with the objective of increasing public knowledge of and changing behavior around AIDS. The program aimed to encourage citizens to seek voluntary testing and counseling for HIV/AIDS.

An SMS-based multiple choice quiz was administered to 15,000 Celtel mobile phone subscribers in the rural region of Mbarra. Free airtime was offered to users to encourage participation in the program; this was determined to be a powerful incentive since users can exchange the airtime with other subscribers as a type of currency.

The quiz was interactive. When participants gave a wrong answer they received an SMS with the correct answer from the cell phone provider.

The uptake rate of the survey was 17.4% and focused on two specific public health areas:

- General knowledge about HIV transmission
- The benefits of voluntary testing and counseling

At the end of the quiz, a final SMS was sent to motivate participants to go for voluntary testing and counseling at the local health center. Those who went to the center were asked a final question: Was this was the first time they had an HIV test? After testing, participants were requested to leave their mobile phone number so that post-test counseling could be arranged. For the people who came to the health centers through TTC, HIV testing and counseling was free of charge.

The quiz produced a 40% increase in patients who came in for testing—from 1,000 to 1,400 during a six-week period.

3) Freedom HIV/AIDS Project

Country: India

Sponsoring Organization and Partners: ZMQ Software Systems and Delhi State AIDS Control Society

Communicating information in an engaging, fun way is a critical ingredient of success in mHealth programs. The Freedom HIV/AIDS games—launched in India in December 2005—have effectively enhanced HIV/AIDS awareness by applying this principle. The games are tailored to target users from different social and demographic groups and run on more than 100 types of mobile phones, from the most basic to the most sophisticated. ZMQ Software Systems, the maker of the games, believes the "Play-and-Learn method [the games employ]…makes learning not only exciting and engaging but helps in the enhancement and retention of knowledge." This belief has been confirmed by the games' popularity: by March 2006, only four

months after the launch date, more than ten million games had been downloaded, many by mobile phone subscribers in small cities and towns, the most vulnerable populations.

4) Project 38: FrontlineSMS

Country: Worldwide

Sponsoring Organization and Partners: kiwanja.net, the MacArthur Foundation and the Open Society Institute

One of the largest and most ambitious mHealth programs in the world is FrontlineSMS. FrontlineSMS is a PC-based software application used for sending and receiving group SMS messages. It allows NGOs to run awareness-raising campaigns and competitions, and carry out text-based surveys, or to simply keep in touch with fieldworkers and supporters. FrontlineSMS gives access to 'bulk' SMS technology designed specifically with the NGO sector in mind. Although other bulk SMS systems do exist, almost all require reliable Internet connectivity—not an option in many developing countries. FrontlineSMS does not require an Internet connection and works with any GSM network. The software communicates via a mobile phone or modem, which can be attached to a computer with a USB cable. Users are encouraged to share views, experiences, and ideas in an online forum and to provide feedback for future versions of the product. FrontlineSMS has been used for many healthcare campaigns worldwide.

Chapter 8

Conclusion and Recommendations

This chapter summarizes the insight of mHealth communication innovations and also develops potential by providing recommendations on existing programmes and the present study. These recommendations may prove to be useful for development of any programme on health message delivery. The potential of mobile phones can bring healthy care to majority.

8.1 Current impact of mHealth

Much of the excitement over the potential of mHealth centers on the developing world, where mHealth programs put in place since the early part of the decade are now yielding actionable data that indicates that some of the hoped-for benefits are materializing. A brief review of sample mHealth programs around the world demonstrates the palpable benefits of using mobile phones in healthcare and prevention.

Equally important to the cost-effectiveness and scalability of mHealth is its ability to provide an effective tool for addressing emerging health needs. Health experts note that within the next 15 years, policymakers and health providers in the developing world will be forced to turn their focus to prevention and early detection rather than late-stage treatment of non-communicable diseases, such as diabetes and cancer, as well as to the health needs of an aging population. These changes are being caused by trends such as migration from rural to urban areas, economic growth, and changing dietary habits. As developing countries tackle and make significant improvements in the spread of communicable disease, average income levels increase along with average life expectancy. Even a slight increase in income contributes to changing dietary habits, and consumption of meat products and processed foods is linked to the contraction of diabetes

and cancer. Late detection of these diseases leads to lower survival rates and reduced life expectancy, and has negative consequences for social and economic development. Developing countries are therefore being confronted with a double burden of treating and containing the spread of communicable diseases while combating a wide range of unfamiliar health challenges. Addressing future health needs will be facilitated by the development of mobile technologies and network expansion. The key technology trends in mobile technology continue to be the same trends that have characterized technological progress for the past 40 years: miniaturization, greater speed, and cost reduction

8.2 Perception of respondents

- All the respondents contacted for the study (interview and In-depth discussion) were probed to examine the current preference towards mobile health messages. Detailed discussion was held with some of the respondents to determine their interest towards receiving these types of messages and further probing was done to know the major health related issues on which they want any type of information.
- Objectives of the study were kept in consideration while drawing the conclusions and recommendations. The overall findings show that maximum respondents were keen to access messages on health if provided to them through mobile phones. Interaction with the respondents revealed that they would like to receive the messages on HIV/AIDS and emergency contraceptives. The proportion of the respondents who would like to receive messages on recent health news was almost similar.
- Respondents were able to tell the specific messages on health spontaneously and on prompting. Some key common perceptions, opinions and suggestions expressed were as follows:
- Messages should be clear at a glance and should avoid ‘information overload’ and difficult words/jargon.
- Photographs can be used in the Ads should have regional flavor for maximum attention on TV.
- Local language should be used so that people can have a better understanding. This was the perception of respondent who were otherwise literate and had no problem with language being in urban settings.

- Majority of the students responded in a manner that if messages can be provided through calls, it would be beneficial for them to have a better understanding and all the queries can be solved at the same time only.
- It was also understated by the students that a helpline number should be there which can be further classified into different health categories so as to attain maximum awareness and information.
- Some students were probed further in discussion and it was found that they were equally interested in having a two way system of messaging so as to have a better understanding
- Some of the students also mentioned that some more topics should be addressed while disseminating information.
- While discussions, it was noted that they wanted the messages through calls so that they can clear their doubts

8.3 Key Recommendations for the Communication Strategy and Next Steps

The following recommendations emerging from the study would help increase effectiveness and develop further strategies more accurately.

- The study provides details on the viewing habits for both TV and radio. These can form the basis for the selection of channels and programs for future campaigns.
- It is recommended that an overarching theme is developed that has a common string running through and binding all campaign components together. Development/identification of the theme must be based on research.
- A qualitative study to build on the results of this evaluation is recommended for understanding the reasons for better/poor recall/comprehension of certain spots over others.
- Periodic studies related to this campaign implemented in future are also recommended to keep a track of the development of mHealth in India
- SMS alerts are useful in raising public health awareness of communicable diseases, these same types of alerts can be used to ensure patient adherence with treatment of chronic

diseases such as diabetes. SMS alerts can be sent out to address chronic diseases and mental health issues in urban areas such as smoking cessation and nutrition reminders.

- Addressing future health needs will be facilitated by the development of mobile technologies and network expansion.
- Ensuring strong local partners to develop relevant content can be useful. Collaboration with other mHealth organizations would be helpful By Maintaining a focus on usability, the campaign can be successful Working in partnership with telecom industry and service providers, the project can achieve the laid down objectives in context of delivering health messages
- In all, the most important recommendation is to develop the strategy by keeping end user in mind
- Mobile health can add efficiency and efficacy to existing systems, advance new systems, and ultimately distribute health care benefits across society.

8.4 Conclusion

The field of mHealth is at an inflection point. With dozens of projects implemented and proven benefits, all trends indicate that investment will continue and mHealth projects will serve an ever wider range of constituents in the years ahead. At the same time, technological innovations will bring enhanced benefits, particularly in the areas of data collection, patient monitoring, and remote diagnostic and treatment support, where application development is already proceeding at breakneck speed.

Health needs in the developing world are rapidly evolving to include chronic diseases, in addition to the communicable diseases most often associated with developing countries. mHealth is well-positioned to address these challenges using currently available technology. For example, SMS alerts can be equally useful in raising public health awareness of HIV/AIDS and in ensuring patient adherence to treatments for chronic diseases such as diabetes. Emerging technologies, such as wide-area wireless systems, will also be an asset in tackling today's health challenges and those of tomorrow.

Documented results—in both the developed and developing world—reveal that mobile technology improves the efficiency of healthcare delivery. The next stage in the evolution of the

mHealth field is to increase the scope and scale of operations. By learning from examples of similar projects, mHealth organizations will enhance their opportunity to scale and increase their health impact.

The studies already in place reveal key building blocks of success for mHealth projects, such as forging strong partnerships and designing with the end user in mind.

The transformational power of mobile networks and devices is helping drive the adoption of scalable and sustainable health initiatives, particularly in the developing world. To move forward, leading players in the field of mHealth agree that multi-stakeholder collaboration on a global level is needed.

Due to its nascent stage, mHealth presents a tremendous opportunity to create a global facilitation body, enabling maximum innovation and impact on global health. Mobile health mobilizes health care and health responsibilities by allowing the consumer more control, direct interaction, and interconnectedness with the health system.

Forge strong partnerships

Partners from multiple sectors bring diverse strengths to the project. Ensure that each partner advances its organizational goals through the project paves the way for successful future collaborations.

Be accessible

Communication is more effective when tailored to specific social, ethnic, and demographic groups. Colloquial language and references to pop culture may be effective in reaching teenagers, while older populations may prefer a more formal approach.

Design with the end user in mind and maintain a focus on usability

Applications and devices must take the users work environment into account in the design phase. In the mHealth environment, ease of use is essential.

Build a long-term funding plan

Continuing the project beyond the initial seed funding can be accomplished by aligning with long-term national health goals. Integration with the national health care program of the country of operation is essential.

Set measurable goals

By setting interim goals and benchmarks, mHealth projects can provide proof of success, allowing them to secure support and funding for expansion. Setting measurable goals also helps project principals to identify the need to quickly correct a particular course of action in the event that interim targets are not met.

Collaborate with other mHealth organizations

With dozens of projects currently operating, the mHealth field is now in a strong position to move forward by sharing techniques and applications. Organizations such as the Open Mobile Consortium are facilitating the ability of the field to move forward by sharing best practices.