



RESEARCH PAPER

Reach, accessibility and acceptance of different communication channels for health promotion: a community-based analysis in Odisha, India

JAYA SINGH KSHATRI¹, SUBRATA KUMAR PALO¹, MEELY PANDA², SUBHASHISA SWAIN³, RAJESHWARI SINHA⁴, PRANAB MAHAPATRA⁵, SANGHAMITRA PATI¹

¹ICMR-Regional Medical Research Centre, Department of Health Research, Bhubaneswar, Odisha, India;

²All India Institute of Medical Sciences, Hyderabad, India; ³School of Medicine, University of Nottingham, United Kingdom;

⁴Independent Researcher, New Delhi, India; ⁵Department of Psychiatry, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India

Keywords

Health communication • Media • Interpersonal communication • Information education and communication • Health literacy

Summary

Introduction. To achieve universal health coverage, improving demand generation at community is necessary. Media plays an important role by acting as a linking pin between health service providers and the community. This study intended to assess the penetration and acceptability of various forms of media for health communication in Odisha, India.

Methods. A cross-sectional mixed method study was conducted in 2016 in four districts. Following a desk review, a situational analysis was done at state, district and sub-district level. Data was collected through direct observation of study sites using a pre-defined checklist on knowledge awareness and practice, focussed group discussion and in-depth interviews using semi-structured questionnaire. Qualitative data was analyzed using framework approach while for quantitative data, we used SPSS 20.0.

Results. Major identified media houses were television (TV), radio and newspaper. Many health programs were being broadcasted in regional TV channels of the state, whereas leading public radio channel broadcasted highest number of health programs almost daily. The major source for information on

disease symptoms and prevention was television (63.6%), remove hyphen (36.6%), newspaper (21.6%), health facility/service providers (17.7%), radio (9.2%), and other media like posters, pamphlets and folk dance (5.5%). Information on disease treatment or management was received mostly from television (61.2%), poster/leaflets (39.2%), remove hyphen (35.2%) and newspaper (19.7%). Only 8% of people received any health related message in mobile in past one year. Boards and hoarding provided information to 16.5% of study population. Nearly 36% respondents got information from health-wall, which are used to promote health awareness through wall paintings, graffiti etc. For immunization related information, interpersonal communication through frontline health workers was the most preferred.

Conclusion. Interpersonal communication is believed to be most acceptable source of information on maternal and child health, immunization and neonatal care. For people with low literacy, remove hyphen campaign, folk media and interpersonal communication were found to be effective.

Introduction

The maternal and infant mortality rates in Odisha, a state in eastern India, are higher than the national average of 93 per 100,000 and 34 per 1000 live births respectively. Further, malnutrition is another key health challenge where 34% of children under age five are stunted and around 27% are wasted [1]. Despite implementation of various programs and initiatives towards improving reproductive, maternal and child health (MCH), the state is yet to achieve expected progress. One of the major cited reasons could be low healthcare seeking attitude in the community owing to poor knowledge and awareness [2]. People's bent of mind for seeking healthcare is often governed by factors like travel distance, expense, closeness to stores, quack availability of healthcare services, ownership etc. It therefore becomes paramount to rein these middlemen and bring them under jurisdiction before trying to tame the community's behavior. While knowledge and awareness

are ingredients which can be provided and accepted by the people, attitude needs to be developed within in order to bring a change in the external being. However, these three ingredients need incessant endeavor from the provider as well as the beneficiaries.

The National Family Health Survey of 2015-16 indicates below-optimal health related knowledge among the community with only 20% women and 33% men having knowledge about life threatening and preventable infections like HIV followed by AIDS. Consequently, inadequate access to healthcare services is also shown by an unmet need of family planning of 13.6% and a mere 62% women availing four Antenatal Care (ANC) visits, despite it being free of cost [1]. Studies have shown a possible correlation between levels of knowledge regarding diseases and actual access to healthcare services [3]. But there appears to be sparse literature revealing the reasons for such observed low level of knowledge.

Odisha's five year health communication action plan

envisions the need for communication across all programs for improved health outcomes, by giving special focus to marginalized and vulnerable groups, which contribute more than 60% of the population [4]. A framework analysis of barriers to access for healthcare services in low-income Asian countries has shown that an important demand side barrier in the community is knowledge on diseases, and services available [5]. Informed knowledge of the services they are entitled to, and provision of services at the facility level will increase not only the demand, but also improve the health seeking behavior of an individual or community. Demand generation is also imperative for achieving universal health coverage. Towards this, communication interventions need to be operated at multiple levels involving both the target beneficiary and key stakeholders like service providers, community leaders and influencers, and health system officials.

In this regard, media interventions play an important role by serving as a linking pin between service providers and community beneficiaries. However, till date, there is paucity of evidence on the effectiveness of such strategies on care seeking and health behaviors. It is pertinent to understand the present status of different media forms in creating awareness and behavior change, the impact of different media for this. This, in turn, will lead to designing a correct media mix method to derive the maximum benefit out of it.

In Odisha, creating awareness could be challenging since the state has over 83% of its population residing in rural areas [6]. Moreover, for any behavior change to occur, the perceptions and beliefs at family and community levels have to be explored first, with special attention to maternal and child health related awareness. Further, the various cultural and social barriers prevailing in the community need to be understood prior to designing any behavior change interventions for accepting services under different programs. Given this background, the present work aimed to understand the current reach, penetration, accessibility and acceptance of various media in different regions of Odisha regarding delivery of health messages. The study intended to assess the reach of different media like TV, radio, mobile phone, newspaper, magazine, cinema, hoardings, wall paintings, street theatre, interpersonal communication by front-line health workers, community groups, self-help groups/non-governmental organizations, health fairs and exhibitions among urban and rural population. Additionally, the study explored the community need for type and pattern of communication channels to get health and related information.

Methods

STUDY DESIGN

This cross-sectional mixed method study was undertaken in the state of Odisha, India, during January-March 2016. The study was assigned by the State Institute of Health and Family Welfare, Government of Odisha.

SELECTION OF STUDY PARTICIPANTS

A stratified random sampling process was adopted to select the participant for data collection. One district was selected randomly from each of the four regional divisions of the state i.e. Southern, Western, Coastal and Northern. From each district, two blocks were selected and in each block, village names were listed and 2 revenue villages were selected by taking into account total population, caste of the people in the village and distance from block headquarter.

DATA COLLECTION

A two-step approach was followed for data collection. First step involved desk review and secondary data analysis. Following a desk review, a situational analysis through multi-stakeholder perspective was carried out at the state, district and sub-district level. This included mapping of media houses currently working in Odisha, mapping of health communication interventions at the facility level and the types of media approaches being followed. In order to understand the general perceptions on the media effectiveness on health with focus on enablers, limiting factors, both qualitative and quantitative techniques were used. Data collection comprised direct observation of study sites using a predefined checklist on knowledge awareness and practice, interviews with the help of a semi-structured questionnaire, Focused Group Discussions (FGDs) and In-Depth Interviews (IDIs) of key informants. All data collection tools were pretested and necessary modifications made.

FGDs were held with adult married men and women to understand their perspective, use, impact and importance on health information received through media and interpersonal communications. While FGDs provided mixed perspectives from a relatively homogenous group of both genders, the interviews were limited to key representatives of multiple stakeholder groups.

Quantitative data related to socio-demographic information, house hold characteristics, economic and occupation influencing media practice was collected from different categories of stakeholders at community level over a pre-tested semi-structured questionnaire. Assuming 50% of the people ($p = 0.5$) were aware about the health messages through media, the required sample size for quantitative data collection was decided by using the Schwartz formula:

$$\text{Sample size } (n_0) = (1.96)^2 pq / l^2,$$

Considering 95% confidence level and precision (l) of 5%, assuming a dropout rate of about 10% and a design effect of 1.5 due to multistage sampling, a minimum total of 660 study participants needed to be interviewed. Data handling and analysis

The interviews and FGDs were transcribed verbatim and translated to English. Qualitative data was analyzed using "framework approach". In this approach, the research team will familiarize with the responses by listening to the audio recordings and by going through the transcribed data repeatedly. During the familiarization process, broad thematic areas emerging from the data

was identified. The next step was assigning the data to different themes, i.e. the coding. The responses based on the codes were grouped under each theme called thematic charts. Based on these charts, interpretation of the data was done and report was presented under different themes. The steps of coding and charting were done by using qualitative data analysis software.

The data collected over the semi-structured questionnaire was entered and analyzed by using SPSS software package, version 20.0. Different socio-demographic correlates like age, gender, education, occupation and other variables influencing the media practice on health was examined. Further, the reach, access and utility of different health messaging approaches and its acceptance was determined. These findings were corroborated with the audience analysis reports of different media houses.

QUALITY ASSURANCE

Quality control for the information generated from the study was carried out at various levels starting from questionnaire designing to analyzing the data. Before starting the data collection, the questionnaire was pilot tested and checked for its reliability and validity. All the field investigators were trained for maintaining the uniformity in the data collection. The lead investigator and co-investigators personally observed few interviews conducted by the field investigators. Forward and backward translation of randomly selected qualitative data was done to validate the quality of translation. Quality control steps were taken during data management by random checking of 10% of the data entered to verify accuracy of the data entered.

ETHICAL CONSIDERATIONS

Ethical approval to conduct this study (protocol number - 30/23/02/2015) was obtained from the state research ethics committee, Odisha (vide number - 47/SHRMU dated 10.03.2015). Necessary permission was obtained from the district health authority prior to data collection. Participants were briefed about the study's objective, potential benefits and harms, and procedure, following which informed consent was obtained from them. They were also informed that participation in the study was purely voluntary and that they could withdraw from the interview process at any time. Each participant was allotted a unique identification code to maintain anonymity. The study was carried out in a manner that ensured the privacy, anonymity and data confidentiality at every stage.

Results

MAPPING MEDIA HOUSES CURRENTLY WORKING IN ODISHA

Various electronic and print media houses were identified and contacted for collecting information on types of programs being broadcasted, topics covered and the coverage. Major identified media houses were TV, radio and newspaper.

With regard to TV, except all national channels, many health programs are being broadcasted in regional channels of Odisha. Most of the programs focus on phone-in discussion on a special topic. The programs were sponsored by many organisations and some were organised by the channel itself. Besides that, the channels broadcast the national programs and other short term advertisements on sanitation, condom use, TB, HIV/AIDS etc. in between different programs.

All India Radio was seen to be broadcasting highest number of health programs amongst all channels. Almost every day discussion on health topics were done by some experts on some topics. Other FM channels catering mostly the youth and urban population were also found to be broadcasting health related programs on special days. Most of these programs were sponsored by some organisations or hospitals. Many of these programs were repeated frequently based on the importance of the topic. Newspapers, the Samaja and the Sambada carried health related information on topics such as TB, HIV, leprosy, filaria, malaria, heat stroke, cancer, kidney disease, skin disease, heart disease, allergic reaction, family planning, diabetes, immunization, mental health, Rashtriya Swasthya Bima Yojana (RSBY), Janani Shishu Suraksha Karyakaram, Data pertaining to programs in TV and radio is shown in Table I.

Besides the electronic and print media, boards, hoardings, posters and leaflets were displayed by the health departments and different national and international organisations at strategic points in villages and towns. Most common places to find a hoarding were bus stop, railway station, highway corridors, health facility, and municipality and panchayat offices. Major health issues covered were malaria, dengue, tuberculosis, HIV/AIDS, different health schemes, RSBY, sanitation programs, non-communicable diseases (NCDs). The key messages given on these hoarding targeted on prevention and management of these diseases.

SOCIO-DEMOGRAPHIC DETAIL OF THE STUDY

PARTICIPANTS FROM THE 4 DISTRICTS IN ODISHA

In total we could collect data from 668 people aged 18 years or more from four districts which participated in the study during two months of data collection period. The age of the study population ranged from 18-65 years and the mean age was 36.8 years. In the study, 41.2% participants were male and 43% were from either a scheduled caste or tribe (Figure 1). Out of the sampled participants 19.9% had no schooling exposure and 28.3% were from a joint or extended family. Values are in line with the Odisha Census data [6]. The mean family size was 4.8 persons. The mean family income per month was Rs.4850 (67 USD).

PENETRATION AND ACCESSIBILITY OF PEOPLE TO MEDIA AND COMMUNICATION CHANNELS

Figure 2 provides a matrix showing the penetration and accessibility of people to media and communication channels. As depicted in the figure, the major source for information related to identification and prevention of

Tab. I. Programs in television and radio.

Name of the program	Channel	Time	Frequency	Types of program	Language	Topic	Coverage
Television							
Doctor-doctor	O TV	Sunday - 12 pm-12:30 pm	Weekly	Question-answer (telephonic)	Odia		40,000-50,000
Health plus	O TV		Weekly	Discussion	Odia		50,000-65,000
Chikitsaka	Kalinga TV	Sunday - 5:30 pm Tuesday - 4:30 pm	Five times a month	Discussion	Odia		TRP-2
Arogyam	Naxatra news	Friday - 2 pm-3 pm	Once in a week and special days	Phone-in	Odia	MCH, diabetes	10,000-20,000
Fit rahu odisha	NEWS-7	Sunday - 2:30 pm	Once in a week	Discussion Phone-in Story type Model features	Odia		2,00,000-2,50,000
Fitness mantra and yoga	NEWS-7	8 am-9 am	Two days	Discussion Phone-in Story type Model features	Odia		1,50,000-2,00,000
Health show	MBC TV	Sunday - 10:00 am-11:00 am Aids day and cancer day	Once in a week	Discussion	Odia		Average
Health shows	Kanak TV	Aids day Polio day	Occasionally		Odia		
Hello doctor	DD Odia	Monday - 7 pm	Once in a week	Discussion phone-in	Odia		Average
Arogya bharatam	DD Odia	Tues day and friday	Twice a week	Discussion	Odia		Average
Radio							
Agana sata	104 FM	20 min	AIDS day	Discussion	Odia	HIV/AIDS	
Awareness campaign	104 FM	1 min	Each hour for 7 days	Advertisement	Odia	HIV/AIDS	
Aids victism	104 FM		Dec 1 st -7 th	Live show	Odia	HI/AIDS	
Cancer awareness	104 FM		Cancer day	Talk show	Odia	Cancer	
Quit tobacco	104 FM						
Take care	104 FM		1 day per week (sunday)	Discussion	Odia	Health Issues	
Polio campaign	104 FM	1 min	Each hour	Advertisement	Odia	Polio	
Chocolate top 10	104 FM	5 min	All health day		Odia		
Sustha niramaya jeevan	92.7 FM	20 sec	10 days	Advertisement	Odia	HIV/AIDS	
Cancer awareness	92.7 FM	3 hours		Discussion	Odia	Cancer	8,00,000
Cold allergy	92.7 FM	30 sec	1 week	Advertisement	Odia		8,00,000

disease was television (63.6%) followed by health wall (36.6%), newspaper (21.6%), health facility/service providers (17.7%), radio (9.2%), and other media like posters, pamphlets and folk dance (5.5%). Information on treatment or management of the diseases was received mostly from television (61.2%), poster/leaflets (39.2%), health wall (35.2%) and newspaper (19.7%). In total, 29% of the study population read newspaper daily and Odia, the local language, was the preferred choice for newspaper. Only 14.8% of total participants read health related news in a paper.

DIFFERENT DISEASE DOMAINS AND THEIR COMMON SOURCES OF GETTING INFORMATION

Table II depicts the common sources of getting information which varies for different domains in health. For general information, people rely on TV and health walls most; however for information related to management, they also look for posters/pamphlets along with TV news. Information regarding the immunisation are always better dispersed by the health worker cadres in our country as is depicted here. The social diseases like HIV/AIDS are mostly

Fig. 1. Socio demographic detail of the study participants from the 4 districts in Odisha.

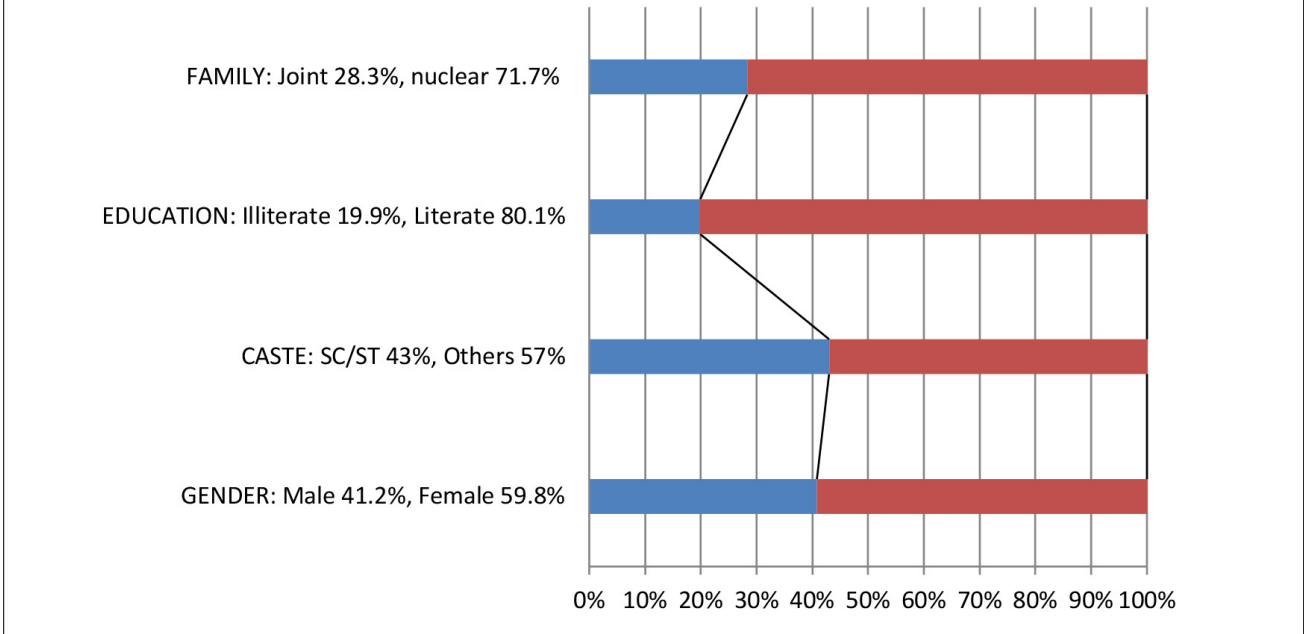
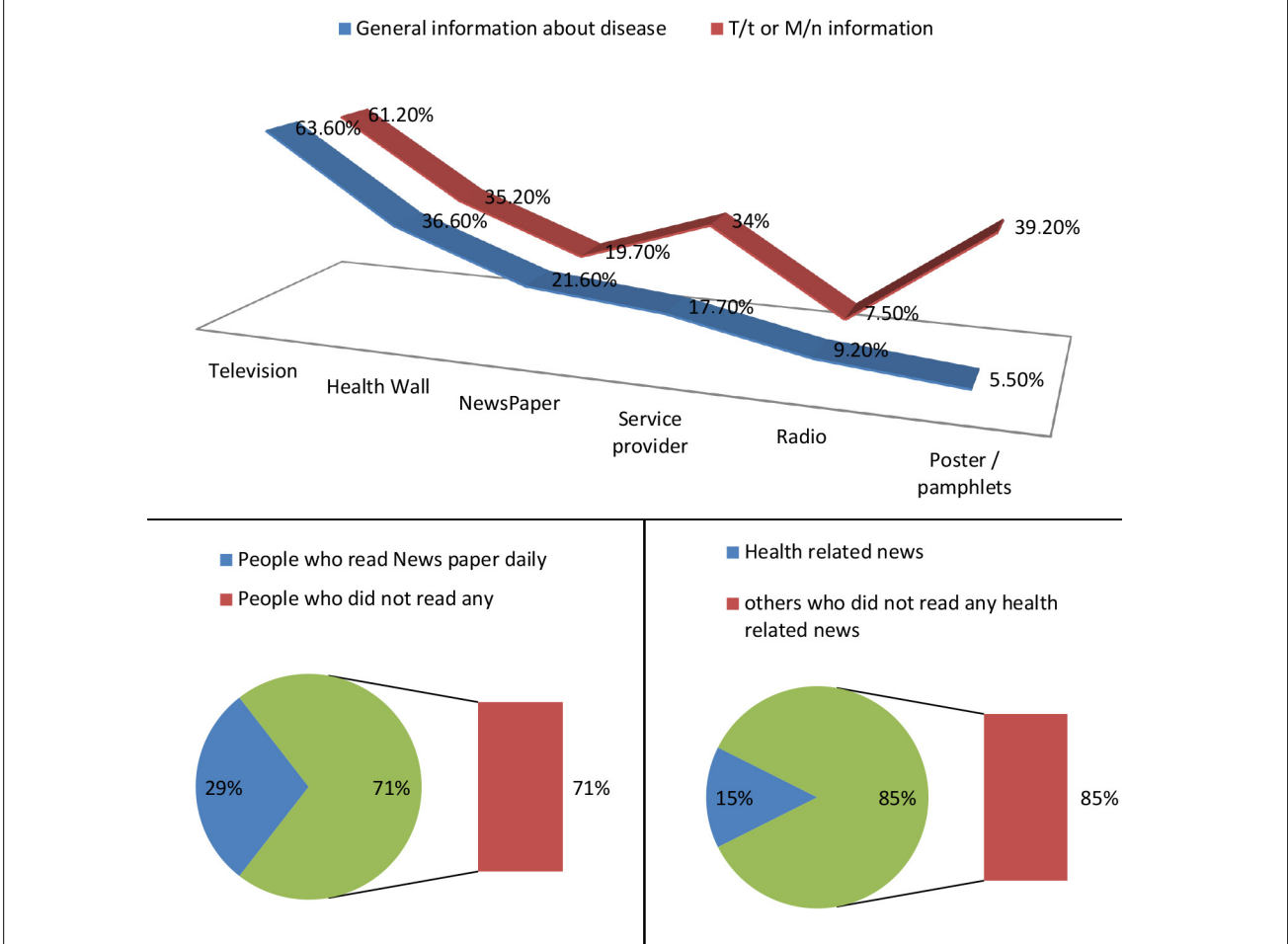


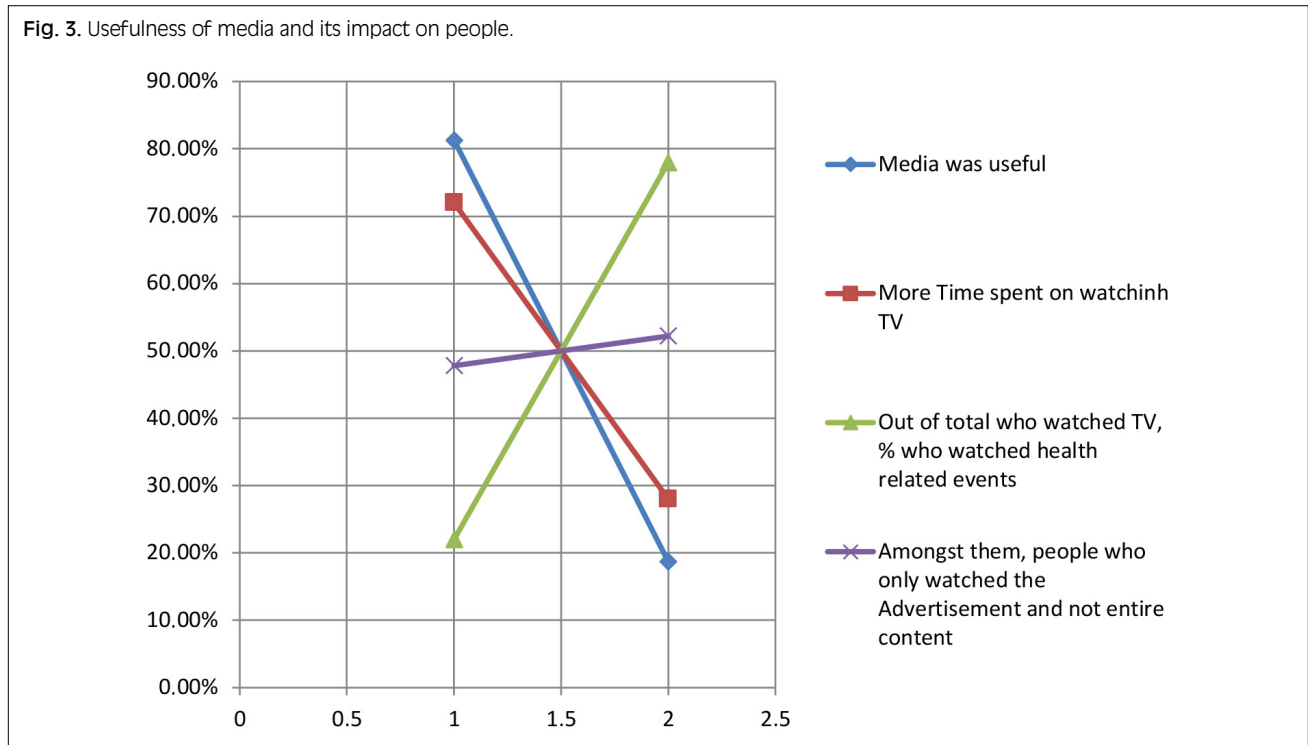
Fig. 2. Matrix showing penetration and accessibility of people to media and communication channels.



Tab. II. Different disease domains and their common sources of getting information.

Sl.No	Health domain	Most common source of getting information	Percentage
1	General information on causation, prevention of disease	Television > health wall	63.6 > 36.6%
2	Information on treatment and management aspects	Television > posters pamphlets	61.2 > 39.2%
3	Immunisation and vaccination	Health service providers like ASHA/AWWs etc.	-
4	Vector borne diseases like dengue , malaria etc.	Health centre facilities > newspapers	50 > 40 %
5	Social diseases like HIV/AIDS	Electronic Media > print media	90 > 80%

Fig. 3. Usefulness of media and its impact on people.



dependant on electronic media like personal messages on mobiles etc. For mosquito borne disease, people seem to look for the health centre hoardings, messages or staff.

USEFULNESS OF MEDIA AND ITS IMPACT ON PEOPLE

As shown in the scatter plot in Figure 3, there were 81.3% of the participants who expressed their opinion regarding the usefulness of the newspaper in providing health related information positively. In total 72.8% of total participants watched television on regular basis and among them 70% watched during evening hours. Only 22% of the total population watched any health related programs on TV being run on Sunday and Saturday and among them 47.8% watch only advertisements and not the entire program. The left portion of the plot shows the first values and right ones shows the rest. The greatest variation was shown by people’s preference to watch health related events among all the programs and least variation among those who didn’t watch the entire content of the advertisement.

SUMMATION OF OPINIONS AND NEED ASSESSMENT OF INFORMANTS

Table III gives a summation of opinions and need assessment of informants based on thematic areas. Out of the total 20 FGDs and 90 IDIs conducted, only 6% of the total study population listened to radio and 3.2% listened to health related program on radio. In total 11% of total study participants used internet either on mobile or computer. The major purpose of the use of internet was for using social media and browsing some websites among the young population. The use of mobile message was not seen to be active in Odisha. Only 8% of people have received any health related message in mobile in past one year. Boards and hoarding provided information to only 16.5% of the study population. The common places to see those were bus stops, hospitals, roads and key traffic junctions. Heath wall was seen in almost all villages of four districts. These walls contained information on various health topics. These were located in important places of the villages. Nearly 36% respondent get health related information from the health wall. The

Tab. III. Summation of Opinions and Need Assessment of informants based on thematic areas.

Thematic areas	Opinions and need assessment	Informant	Quotes
Motif to gather information	Most of them were keen to read newspaper, but search further when they want to know more about something important. They rely more on the Doctor's column since its by renowned experts and whom they cannot get to visit that easily	A 30-35 years old participant from Nawarangpur	"We read newspaper most of the time during leisure time at the shop. Yes, I like the main page and sports news. Recently i have read about the kidney disease. I want more information on diabetes, as one of my relative is having sugar. I prefer the question-answer section most as it is written by the professor of the medical colleges. We cannot visit them for small matters but these provide us very important information"
Faith on health service providers (HSPs)	Many were found to only listen to what their HSP would inform them. This might be due to the faith that HSPs are closest to doctors and give first-hand information	A 45-50 years old participant from Keonjhar	"I do read newspaper but very rarely. Whenever i have any problem i ask the ASHA didi (a frontline community health worker) and get most of the information. She gives us the medicine for small diseases like cold and cough. When we had any big disease, we prefer to go Cuttack. The doctor gives us all information about the disease"
Time	Many watched TV and would mostly see the health related Ads only when it came in the Break slot or change slot. Health Talk shows were also an instant Hit	An elderly participant from Puri	"We do not watch the program as such, but we watch the advertisement comes in between serials. I remember last time I have seen one talk show on childhood illness in O TV. Two doctors from medical colleges were there. I tried the number to ask my question but i could not talk to them. However they answered very nicely to all the questions being asked. I got to know about many things from that show. I will try to watch is regularly"
Reliability	Youngsters were seen showing their reluctance and not believe whatever was surfed on internet, Rather, they said they would opt clarifying from doctor himself	A30-35 years old farmer from Puri	"We use internet for Whatsapp and Facebook. Sometimes I browse for jobs and other documents. I have not used internet to know about any disease, as I get most of the information from the doctor we visit"
Mode of transmit	Few young adults were found to be keen on getting messages on mobile phone especially related to advice on diet. They wanted to receive more such messages	A young adult from Keonjhar	"Last time I remember to get a message in my mobile was on use of fruits, vegetables and life style changes from AYUSH department. After that I have not received any such messages. It is good to see messages but how many people can read it? It should be more regular and on the disease or problem specific to our area like TB or Malaria"
Preferences	It was found that waiting areas, whether shop, hospital, railway, bus stop etc. are the perfect areas where one gets to or is bound to go through. These needs to be catchy, crisp and updated	A 35-40 year old businessman from Puri	"Most of the boards I see when I visit any hospital. Not every time I read those but when I was waiting for my turn or accompanying any patients I prefer to read those. Here most of the hoardings are old and colour faded. Some are placed by the NGOs. That need to be more attractive and more in number within our block"
Preferences	Some prefer close and secluded places especially females and so they prefer the lady of the village to call them and speak	A 40-45 years old housewife from Bargarh	"It is the VHND session (Village health and nutrition day) where i get information on mother and child health. ASHA didi, ANM didi provides us information on immunization, nutrition and check our health. They personally contact us during the time of immunization. I think besides that i get information about pulse polio from television that comes in between the serials"
Sensitive information	Social issues or sensitive talks need to be addressed on a one to one basis and then gradually in groups. Some prefer to keep it open but many need closed door discussions. HSPs should also be trained on how to disburse information with all cares to privacy and autonomy	A shopkeeper from Keonjhar	"Everyone in our village is aware of HIV/AIDS but no one talks about it. I got the information from the dance show done five years back. Then I saw in the big hoarding and posters near bus stop with clear messages on spread of the disease. I remember when I initiated the discussion at my shop few people walked away. Now the situation has changed. Even in TV during films and serials we get advertisement on this. As this is little sensitive issue the health workers are not discussing with us. I do not know if they are discussing with the women or not"

preferred source of information changes according to the disease and health information.

Immunization related information, interpersonal communication through grass root health workers (Accredited Social Health Activists-ASHA, Anganwadi worker (AWW), Auxillary Nurse Midwife-ANM) was found to be more effective and preferred among the population. They got more information on these during the village health and nutrition days (VHND). Other media like posters, health wall and TV played equal role in providing information on immunization.

In all the districts, interpersonal communication was seen to be accepted as a strong medium of communication for having knowledge and awareness on breast feeding and safe motherhood practice. The health worker's direct interaction with the target beneficiaries during VHND sessions were found to be an effective strategy. Nearly 30% of the respondents mentioned about the health wall and TV as their source of information. Similar responses were seen for having information on family planning along with higher contribution from electronic and print media.

Electronic (90.2%) and print media (80.5%) were cited to be major source of information on HIV/AIDS followed by posters among the respondents. More than 10% of the respondent mentioned about folk media and hoardings/boards as their source of information on the disease.

Health centres or facilities (50.1%) and newspaper (41.3%) were cited to be leading sources of information on infectious diseases like malaria, filarial, TB and diarrhoea as well as NCDs. Folk media had a major role here as 32.3% of the study population got information regarding infectious diseases from folk media.

Discussion

The Ottawa Charter of 1986 for health promotion conveys a set of actions to foster well-being and good health. Built upon the construct of 5 principles of positive health, participation, competence, perspective and equity, it strategizes essential components for health promotion. If we notice, all the essential strategies in the Charter hinge upon creating effective communication and mass media coverage for taking up the desired shape, whether it is building healthy public policies, creating supportive environment, developing personal skills or reorienting health services. Once these key actions are incorporated by the 3 pillars of enabling, mediating and advocating processes, we can speculate a community of health literate people capacitated enough to obtain, process, and understand basic health information and services needed to make appropriate health decisions. This is what our tree of vision is; which is possible only with effective communication strategies as the roots. The firmer the rootlets are, the faster is the vision shaped up.

COMMUNICATION CONSTRUCTS: PENETRATION, ACCEPTABILITY, ACCESSIBILITY AND DELIVERY

The major source of information on prevention and treatment of diseases for the households was TV followed

by health wall and newspapers. These avenues should be exploited adequately by the healthcare system to optimize delivery of key health messages. A systematic literature review of effectiveness of community based strategies in increasing screening access showed that strategies that combining mass media campaigns with direct tailored information transmission to beneficiaries by service providers seemed most successful [7]. Customizing and tailoring the health messages is one of the major benefits of flexible mass media campaigns using social media and personalized situation based targeted messaging services. Inclusion of health promotion practices in routine care is imperative for a strong healthcare system. Individual counselling for improved nutrition, physical activity, smoking cessation, stress management, weight control and other health related behaviours is based on this approach of health promotion [8].

Interpersonal communication is a key skill among service providers, especially in communities with low levels of education. In this study less than 18% of the respondents had received information on identification and prevention of diseases from the healthcare service providers. Lack of confidence and absence of structured mechanisms of message communications by the service providers might be the reason for this. Additionally message framing also plays a key role in the decision making process regarding access to healthcare. Positively framed messages based on social variables tend to have a strong impact on an individual's acceptance of the message [9].

Although less than 15% participants got their health related information from newspapers, more than 81% expressed their opinion regarding the usefulness of the same in providing health related information. However, optimum use of this media may be made to advocate the public adoption of basic preventive measures, like handwashing, while such messages may be displaced in a mass media dominated by discussion of technical interventions [10].

Penetration of TV for media consumption was high at over 72%, but around 48% of the participants did not watch the entire show related to health information. TV shows like health talks and phone in programs are preferred by the people because of the chance of getting information from specialist. Penetration of radio as a medium is poor with only 3% of the population listening to health related programs on the radio. Exposure to messages by such media is generally passive, resulting from an incidental effect of routine use. The likelihood of success of such messaging is substantially increased when the target behaviour is one-off or episodic (e.g., screening, vaccination, children's aspirin use) rather than habitual or ongoing (e.g., food choices, sun exposure, physical activity) [11].

The use of internet and social media is on the rise with 11% accessing this media. However, the use of mobile messaging services for delivery of health information does not seem to be active in the state, with only 8% receiving any health information related SMS in the past year. Lack of control in onward movement of

health messages can pose a serious challenge to the widespread use of social media for this purpose. The message can be distorted during chains of sharing and unintended results attained. With increasing penetration of internet, health information should be disseminated in a structured manner. There is also the added risk of emerging health hazards being over-reported in mass media in comparison to common threats to public health [12]. Therefore frameworks for health promotion education, as well as evidence based and ethical health promotion methods which have been developed may warrant further studies in detail [13].

Boards and hoarding provided information to only 16.5% of the study population. Hoarding and boards at strategic places are cited to be important source of information for male members, as they travel out for work for most of the time. These could be efficiently used for 'negative advertising' as evidenced by anti-tobacco messaging in recent decades. Literature suggests that 'negative advertising' is an effective way to encourage behavioural changes, but it has enjoyed limited use in public health media campaigns. However, as public health increasingly focuses on NCDs prevention, negative advertising could be more widely applied [14].

The penetration of the health wall strategy was very good with nearly all study villages having these at important places in the village. Nearly 36% respondent get health related information from the health wall. Health wall or "Swasthya Kantha" in local language is an initiative by the State Government to communicate health messages by using an Integrated Behaviour Change Communication strategy and the Information and Needs Assessment in tribal districts undertaken by State Government. Odisha is a state, rich in folk art. It is also a land where stories and legends appeal to people. It was anticipated that using the 'Kantha Kahe Kahani' (wall tells a story) format to transmit health messages, people would shed old habits and adopt new and healthy behaviours [15].

Health workers using interpersonal communication was more preferred and effective within the community for immunization, breastfeeding and safe motherhood practices related information. The direct contact sessions with the health workers occurred during VHND sessions, which were found to be an effective strategy. VHND is a monthly village level activity for dissemination of information and service packages ranging from MCH, immunization, nutrition, family planning, sanitation, health promotion, counselling and others.

Print media and electronic media contributed more to the information accessed on family planning. These media types were also major sources of information on HIV and AIDS which lacked interpersonal communication due to social taboo in the community. Choice of television as medium of communication seems to be effective in addressing these concerns arising from behavioural and access differences between different socio-economic strata [16].

Health centres and newspapers were the major source of information on diseases which were the focuses of

national control programs such as Malaria, Filariasis, TB and NCDs. Folk media had a major role regarding information on prevention and control of infectious diseases. But information on NCDs are lacking in the community. The FGD members expressed that the health workers are more focusing on MCH. It has been observed that socio-demographic factors such as education and age affect individuals' use of and access to communication channels [17]. The receivers trust in the media of communication is an important factor at play in selection of the choice of media by policy makers. This trust by individuals is related to both their perception of the mass communication process and also to socio-demographic factors, but is more strongly related to the former [17-19].

COMMUNITY NEED ASSESSMENT

A detailed view point of people of the Odia community in the four districts of Odisha as selected by random sampling showed that most of them are literate, watch TV, use mobiles mostly for entertainment and social surfing, are health conscious and sufficiently motivated to know more about diseases and take care of their health. The government has a strong mandate of fulfilling the health care needs of its citizens and has introduced many programs through the National Health Mission. In addition to a robust policy and responsive leadership, the active participation of community is the catalyst for seamless and effective implementation of these services. On one end of the spectrum, we have the societal norms of the community which are deeply embedded, whereas, on the other end is the intervention and policies designed to influence behaviour. Thus, a judicious balance between the norms and values of people and public regulations has to be created; where the provider needs to synchronize their services with the societal mind-set and cultural acceptability of people, and adopt appropriate steps as per the contemporaneous need to achieve their desired outcomes [20-22].

The coverage of media in the state is widespread too. Daily newspapers like vernacular language also have online links too. Most of them watch Odia daily soaps regularly like a ritual. Besides, there are many health shows which discuss important diseases and consult telephonically too. Institutes of media studies can nurture health journalists and intellectuals who further aid in preparing crisp messages to capture audience. The Health Management Information System is yet one such umbrella platform which works with harmonious coordination within the state and also has been applauded from time to time. It manages all information obtained from various sectors and gives a first-hand information about the what and how. With data delivery at click of our fingertips, it becomes easy to move further to communicate with the people as per their demands and needs [23, 24].

Therefore, when the providers and beneficiaries are ready, the sole thing to diligently work upon is the generation of demand. Individual demands like in our survey are like wishes, which might fade or might take a backseat in due

course of time. However, when the demand generation comes as a force from the community as whole, it becomes reckoning. The presence of stakeholders, experts, community leaders and other members officiate the demand generation which becomes a command. The realisation that cultural beliefs are deep rooted and imbibed and needs to be uprooted gradually has to start from the people themselves. It is then that providers can aid and help them come out [24, 25].

Conclusions and recommendations

Interpersonal communication is believed to be most acceptable source of information on MCH, immunization and neonatal care. Appropriate skill building of service providers needs to be taken up for optimum use of this media. Educational level and media habit was found to be strongly correlated. For people with low literacy, health wall campaign, folk media and interpersonal communication was found to be effective. Tailoring of messages for different socio-economic and education strata can help uniform dissemination of key health messages.

The community tends to obtain information from particular sources for specific diseases like physician's communication, posters and TV shows for infectious diseases and newspapers for non-communicable diseases. This fact can be used to determine the choice of media for specific health messages. Internet is yet to percolate a large section of population and geography in the state. People prefer to receive messages on mobile on health related topics at regular interval. While the use of social media expands rapidly, frameworks need to be adapted for source controlled, secure, truthful and ethical transmission of communications related to health.

VHND is considered a great platform for transmission of the information and key messages to the beneficiaries and an intensive and structured health communication towards locally sensitive health promotion needs may be developed. Awareness on the sanitation and hygiene programs, projects and different national health programs was adequate, and newspaper, wall posters and health workers were the major source of information on such programs.

Acknowledgements

Funding sources: This study was funded by the State Institute of Health and Family Welfare, Department of Health and Family Welfare, Govt. of Odisha, India.

We are grateful to all study participants for sharing their valuable experience. We sincerely thank the physicians, auxiliary nursing midwives and health workers for facilitating data collection. We acknowledge the support of the Department of Health and Family Welfare, Govt. of Odisha and IIPH Bhubaneswar, PHFI, as this study was conceived and conducted during the authors' (SP, SKP, MP, SS) affiliation with PHFI.

Conflict of interest statement

The authors declare no conflict of interest.

Authors' contributions

SP, SKP and SS conceptualized the study. SP, PM, SS designed the study's tool. SS and SKP, MP were involved in the data collection. SS, MP, RS and PM analysed the data. JSK, SKP and MP wrote the first draft which was further refined by SP, RS and PM. All were involved in writing and reviewing the manuscript. All authors have gone through the manuscript and approved the final version.

References

- [1] National Family Health Survey 4 2015-16. State Fact Sheet Odisha. Ministry of Health and Family Welfare, Government of India. Available at: http://rchiips.org/nfhs/pdf/NFHS4/OR_FactSheet.pdf (accessed on 19/12/2020).
- [2] Barik D, Thorat A. Issues of unequal access to public health in India. *Front Public Health* 2015;3:1-3. <https://doi.org/10.3389/fpubh.2015.00245>
- [3] Dark CK, Ezenkwele UA. Access to care as a predictor of patients' knowledge of cardiovascular diseases. *J Natl Med Assoc* 2007;99:1338-46.
- [4] Capacity Building of Health Communication Cadre in Odisha - A CoE Initiative, State Institute of Health and Family Welfare. Available at: <http://www.nrhmorissa.gov.in/writereaddata/Upload/Documents/1-BEE%20TRAINING%20document%20.pdf> (accessed on 19/12/2020).
- [5] Jacobs B, Ir P, Bigdeli M, Annear PL, Van Damme W. Addressing access barriers to health services: an analytical framework for selecting appropriate interventions in low-income Asian countries. *Health Policy Plan* 2012;27:288-300. <https://doi.org/10.1093/heapol/czr038>
- [6] District Census Handbook -Odisha, Office of the Registrar General and Census Commissioner India, Ministry of Home Affairs, Government of India. Available at: <https://censusindia.gov.in/2011census/dchb/Odisha.html> (accessed on 19/12/2020).
- [7] Margaret E Black, Janet Yamada VM. A systematic literature review of the effectiveness of community based strategies to increase cervical cancer screening. *Can J Public Health* 2002;93:386-93. <https://doi.org/10.1007/BF03404575>
- [8] Kreuter M, Farrel D, Olevitch L, Brennan L. Tailoring health messages- customizing communication with computer technology. 2nd ed. New York: Lawrence Erlbaum Associates Inc 2000, pp. 4-5.
- [9] Rothman AJ, Salovey P, Antone C, Keough K, Martin C. Influence of message framing on intentions to perform health behaviours. *J Exp Soc Psychol* 1993;29:408-33. <https://doi.org/10.1006/jesp.1993.1019>
- [10] Leask J, Hooker C, King C. Media coverage of health issues and how to work more effectively with journalists: a qualitative study. *BMC Public Health* 2010;10:535. <https://doi.org/10.1186/1471-2458-10-535>
- [11] Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behaviour. *Lancet* 2010;376:1261-71. [https://doi.org/10.1016/S0140-6736\(10\)60809-4](https://doi.org/10.1016/S0140-6736(10)60809-4)
- [12] Bomlitz LJ, Brezis M. Misrepresentation of health risks by mass media. *J Public Health (Bangkok)* 2008;30:202-4. <https://doi.org/10.1093/pubmed/fdn009>
- [13] Carter SM, Rychetnik L, Dietetics PgD, Lloyd B, Kerridge IH,

- Baur L, Bauman A, Hooker C, Zask A. Evidence, ethics, and values: a framework for health promotion. *Am J Public Health* 2011;101:465-72. <https://doi.org/10.2105/AJPH.2010.195545>
- [14] Apollonio DE, Malone RE. Turning negative into positive: Public health mass media campaigns and negative advertising. *Health Educ Res* 2009;24:483-95. <https://doi.org/10.1093/her/cyn046r>
- [15] Kantha Kahe Kahani Swasthya Kantha Making Odisha Villages Healthier. NHM Odisha, UKAID, MoHFW Odisha. Available at: <http://sihfwodisha.nic.in/sites/default/files/Reports%20%26%20publication/SWASTHA%20KANTHA.pdf> (accessed on 19/12/2020).
- [16] Ackerson LK, Ramanadhan S, Arya M, Viswanath K. Social disparities, communication inequalities, and HIV/AIDS-related knowledge and attitudes in India. *AIDS Behav* 2012;16:2072-81. <https://doi.org/10.1007/s10461-011-0031-y>
- [17] Avcı K, Çakır T, Avşar Z, Taş HÜ. Examination of the mass media process and personal factors affecting the assessment of mass media-disseminated health information. *Glob Health Promot* 2015;22:20-30. <https://doi.org/10.1177/1757975914536912>
- [18] Sharma K, Gaiha SM, Pati S, Sarabhai M. Actor–doctor partnership for theatre-based public health education. *Health Education J* 2020;80:1-14. <https://doi.org/10.1177/0017896920949604>
- [19] Pati S, Chauhan AS, Mahapatra P, Hansdah D, Sahoo KC, Pati S. Weaved into the cultural fabric: a qualitative exploration of alcohol consumption during pregnancy among tribal women in Odisha, India. *Subst Abuse Treat Prev Policy* 2018;13:1-9. <https://doi.org/10.1186/s13011-018-0146-5>
- [20] Pati S, Kadam SS, Chauhan AS. Hand hygiene behavior among urban slum children and their care takers in Odisha, India. *J Prev Med Hyg* 2014;55:65-8.
- [21] Pati S, Chauhan AS, Panda M, Swain S, Hussain MA. Neonatal care practices in a tribal community of Odisha, India: a cultural perspective. *J Trop Pediatr* 2014;60:238-44. <https://doi.org/10.1093/tropej/fmu005>
- [22] Pati S, Chauhan AS, Palo SK, Sahu P, Pati S. Assessment of Village Health and Nutrition Day implementation—findings from a mixed method study in Odisha, India. *Clin Health Promot* 2016;6:42-8. <https://doi.org/10.29102/clinhp.16007>
- [23] Pati S, Sharma K, Zodepy S, Chauhan K, Dobe M. Health promotion education in India: present landscape and future vistas. *Glob J Health Sci* 2012;4:159. <https://doi.org/10.5539/gjhs.v4n4p159>.
- [24] Mishra N, Panda M, Pyne S, Srinivas N, Pati S, Pati S. Barriers and enablers to adoption of intrauterine device as a contraceptive method: a multi-stakeholder perspective. *J Family Med Prim Care* 2017;6:616-21. <https://doi.org/10.4103/2249-4863.222028>
- [25] Palo SK, Samal M, Behera J, Pati S. Tribal eligible couple and care providers' perspective on family planning: A qualitative study in Keonjhar district, Odisha, India. *Clin Epidemiol Glob Health* 2020;8:60-5. <https://doi.org/10.1016/j.cegh.2019.04.008>

Received on December 19, 2020. Accepted on February 11, 2021.

Correspondence: Sanghamitra Pati, Regional Medical Research Centre, Indian Council of Medical Research, Department of Health Research, Govt. of India, Chandrasekharpur, Bhubaneswar, 751023 Odisha, India - Tel.: +91-94370-93306 - E-mail: drsanghamitra12@gmail.com

How to cite this article: Kshatri JS, Palo SK, Panda M, Swain S, Sinha R, Mahapatra P, Pati S. Reach, accessibility and acceptance of different communication channels for health promotion: a community-based analysis in Odisha, India. *J Prev Med Hyg* 2021;62:E584-E465. <https://doi.org/10.15167/2421-4248/jpmh2021.62.2.1929>

© Copyright by Pacini Editore Srl, Pisa, Italy

This is an open access article distributed in accordance with the CC-BY-NC-ND (Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International) license. The article can be used by giving appropriate credit and mentioning the license, but only for non-commercial purposes and only in the original version. For further information: <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>