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Role of Social Media in Engaging Tribal Communities for Health Communication -A Case Study of WhatsApp Use in Dharani, Maharashtra

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Abstract—*Tribal communities living in remote areas often suffer from persistent challenges. They find difficulty in accessing timely and accurate health information. Geographic isolation, few healthcare facilities and low literacy levels limit them to reach conventional health communication mechanisms. Essentially, different solutions are needed to enhance the flow of information and community involvement. Technology plays vital role in communication. Thus, digital communication platforms, especially widely spread mobile-based applications, can give new opportunities for health communication.*

This study explores the use of WhatsApp as a health communication medium among tribal communities in Dharani taluka of Amravati district of Maharashtra. The research focuses on dissemination of health-related information through WhatsApp, community participation and engagement analysis with various types of health messages.

A qualitative approach to research was adopted. WhatsApp group consisting of members of the tribal community is the main site of observation. Data was collected by continuous monitoring of group interactions. Responses to messages, queries from the participants and content-sharing behaviours were recorded. Engagement levels were measured through response frequency, the nature of interactions and repeating themes in group discussions.

The results of research indicate that WhatsApp is an effective and user-friendly platform for health communication in tribal settings. Participants displayed a shared interest in the messages concerning maternal health, personal hygiene and disease prevention. Such topics led to active discussion and sharing of information among group members. In contrast, messages focused on nutrition and diet practices produced relatively lower levels of interaction. This suggests differences in apparent significance or immediate concern. The interactive nature of WhatsApp givesreal-time clarification, peer discussion and better dissemination of health information within the community.

Altogether, the study highlights the potential of WhatsApp as a cost-effective tool for health communication in remote tribal areas. Mobile-based communication platforms can support the existing public health efforts. Such platforms like WhatsApp increase the reach and engagement level in the community. Future research can be done to investigate how these types of digital interventions systematically incorporated into public health programmes. It can also measure their impact over time on health knowledge and practices among underserved populations.

Keywords: *Health communication, Tribal communities, WhatsApp engagement, Digital health interventions, Community health awareness.*

1. Introduction

Effective health communication plays a vital role in preventing disease and promoting wellness. It helps people to take better care of their health and promote health literacy. Effective health communication also enables people to find, understand and use information and services for better health outcomes.

India's tribal communities consistently have worse health outcomes than other populations with higher rates of maternal deaths, childhood malnutrition, infectious illnesses and reduced access to formal healthcare services. These health gaps are based on different structural barriers such as living in remote locations, financial hardship, lack of education, language differences and underfunded healthcare infrastructure.

The Dharani taluka of Amravati district in Maharashtra is home to majorly tribal population, specifically the Korku people, along with Bhil, Gond and other tribal communities. These communities live in scattered villages in mountainous and forested terrain and present major obstacles

to reaching healthcare facilities. Health centres and clinics are often distant and travel becomes even more difficult when the monsoon rain come. Healthcare communication in these areas is highly dependent on face-to-face interactions through Accredited Social Health Activists (ASHAs), Anganwadi workers and the occasional mobile health camps. Although these approaches are still very important, they have limitations in terms of lack of staff, time constraintsand incomplete coverage.

The widespread adoption of mobile phones in rural India has created new opportunities for health communication. Access to low-cost smartphones and inexpensive internet plans has brought digital connectivity to many isolated communities. WhatsApp has been popular among digital platforms as the application is responsible for text messages, voice recordings, pictures and videos while facilitating the group conversation. These features are of particular value in communities where reading skills are limited.Audio and visual materials can substitute written materials.

Research shows that social media platforms can increase access to health information, foster peer support networks and increase community participation. Yet most existing studies are focused on urban dwellers, young people or medical professionals. There is not enough research documenting the usage of WhatsApp in health communication among tribes in India. It is important to learn about how these communities is engaging with digital health materials, including how they are interacting with each other and what content they prefer. Such study will create culturally suitable digital health programs.

This research seeks to address above research gap by observing WhatsApp use for health communication in tribal communities.

The objectives are:

1. To evaluate the role of WhatsApp as a medium for health communication among tribal communities.
2. To assess community engagement and responsiveness to health-related messages.
3. To identify types of health content that generate the most interaction and participation.

2. Literature Review

Health communication is being recognized as a foundation of public health systems. Contemporary public health discussion emphasizes that promotion and protection of health require strategic, adaptive and context-responsive communication (Cliff Despres, November 2020). In underserved communities including tribal communities, communication systems must respond to historical inequities, deficit of trust and structural constraints to access the information.

However, rural and tribal regions commonly experience structural barriers like geographic isolation, limited infrastructure and lower level of literacy. Itlimits them to access the conventional health communication mechanisms.

Digitalisation has brought a lot of change in communication systems. Digital communication help to restore trust during crisis situations through transparency and real-time interaction. (Upadhyay, 2025)Although conducted in the tourism sector, Kumar and Upadhyayhighlight the importance of digital engagement in their finding. Theyhighlighted perceived usefulness of digital communication in relation to rebuilding public confidence. Thisis transferrable to public health communication, particularly in underserved settings.

Social media platforms have further reconsidered health communication models. A systematic review by Kite et al, shows that the traditional Hierarchy of Effects(HOE) model where exposure leads to behaviour change ina sequential fashion is not sufficient in social media contexts. Instead, engagement takes the place of awareness as the critical mediating variable. Digital communication pathways are circular and interactive, rather than linear, where feedback loops increase the reach and behavioural influence of messages.(James kite, 2023)This shift is especially relevant for WhatsApp based communication, where interaction, clarification and peer reinforcement are factors in shaping message uptake.

Empirical evidence also indicates that communication channel exposure influences risk perception differently (Shim, 2019).Social networking platforms may increase perceived risk and awareness through peer-based dissemination. In participatory contexts, two-way communication enhances engagement and stakeholder involvement (walsh, 2021). Social media platforms enable synchronous and asynchronous communication, enabling interactive conversationinstead of passive messages reception.

Digital messaging intensity also appears to have an influence on health outcomes. Price-Haywood et al,demonstrate a dose-response effect of secure portal messaging and improved glucose control. While the research was conducted in a clinical patient-portal setting, the findings suggest that long term digital interaction strengthens adherence and behavioural engagement.(Price-Haywood, 2018) This supports the hypothesis that WhatsApp group interactions in community settings may have a similar effect on health awareness and action.

Despite growing research on social media in health communication, very few empirical studies examine how WhatsApp functions as an interactive health communication platform within tribal communities. Existing literature mainly focuses on urban or general populations, with insufficient attention to engagement patterns, message formats and community-level interaction in remote tribal settings.

The present study addresses this gap by exploring WhatsApp-based health communication among tribal communities in Dharani, Maharashtra. By analysing engagement patterns, responsiveness and thematic interaction,

the study contributes context specific evidence to the developing discourse on digital health engagement and participatory communication models in marginalized settings.

3. Methodology

3.1 Research Design and Communication Perspective

This study has adopted a qualitative research design in the context of mass communication and digital media studies to explore WhatsApp as a community-based health communication system in a tribal area of Dharani, Maharashtra. Rather than assessing individual attitudes or internal cognitive states, the research was concerned with observable communication processes, interaction patterns, message circulation and community-level engagement behaviours within a digital platform.

The research did not view WhatsApp as simply a messaging tool, but rather as a mediated environment of communication within which institutional health information, local interpretation, peer dialogue and feedback all circulate simultaneously. The objective was to understand that how health messages are received, discussed, shared and enacted in a tribal communication setting.

This study was guided by six research questions concerning platform use, observed benefits of the platform, interaction frequency, topic relevance, message format preference and observable action following message exposure.

Research Questions

1. How do you use WhatsApp to get health information?
2. What are the benefits of using WhatsApp for health communication?
3. What do people do after receiving a health message on WhatsApp? (Ignore, Share, Ask questions, Follow advice)
4. What is the frequency of interaction with health messages shared on WhatsApp?
5. What health topics get the most attention in tribal communities?
6. Which format (text, video, image, voice) do people prefer for health messages?

3.2 Context of the Study

Dharani taluka is a tribal dominated area with geographical remoteness and limited physical accessibility of formal health services. In such contexts, traditional media of mass communication like print media and institutional outreach are often constrained by infrastructural and inter-personal limitation. However, mobile phone penetration has grown considerably in recent years and WhatsApp has become common among households and frontline health workers.

The WhatsApp group chosen for this study was a semi-public communication space where health-related messages were shared on a regular basis by a moderator, usually a frontline health worker (ASHA) and where members could respond, ask questions or share information with others.

The WhatsApp group that was analysed for this study was not created for research, but rather as an already existing communication space that was created as part of routine health outreach efforts in the region. The group had been formed by local health facilitators for the purpose of disseminating information about maternal health, immunisation schedules, disease prevention and hygiene practices. Members had joined voluntarily before the beginning of this research and communication practices within the group had developed organically over time.

Because the researcher did not intervenein the formation, moderation or messaging patterns of the group, the study is more of a naturalistic communication environment, rather than a controlled or experimental setting. Messages circulated as they usually would in local health communication activities. Participants responded, ignored, questioned or shared messages based on their extant communicative norms.

This naturalistic setting is methodologically significant for number of reasons. First, it preserves ecological validity by capturing communication as it occurs in real-life digital practice rather than under research-induced conditions. Second, it limits the effect of reactivity; participants were not responding to researchergenerated stimuli but to routine health messages from a familiar source. Third, it enables analysis of all responses. Enlisting silence, delay in response, clarification patterns and informal peer discussions, it gives complete picture which may be altered in a formal intervention study.

In the view of mass communication process, the study ofreal interaction within tribal contextis studied only by an independently functioning WhatsApp group. This WhatsApp platform operates simultaneously as a broadcast channel, a feedback forum and a community discussion space for all tribal members. Observation of such platform without manipulation allows the researcher to analyse communication in better way. It also analyses integration of institutional health communication with local culture, tribal interpersonal networks and everyday communication within tribals.

In essence, the pre-existing and independentnature of the WhatsApp group ensured that the data represented real communication practices rather than research-driven interaction. Thisaddedcredibility and contextual relevance to the findings.

3.3 Sampling Process

A purposive sampling strategy was used to identify one specific WhatsApp group. Such WhatsApp group included tribal residents of Dharani and a moderator. It was actively used for health-related communication by a moderator associated with local health services. It also had sustained interaction over at least three months.

A WhatsApp group which was information-rich and directly relevant to the research objectives was selected through a purposive sampling strategy. Unlike random

sampling, purposive sampling is essential in qualitative research study. It aimed to examine interactive patterns, engagement behaviour and communication flow within a health-focused communication space. It was important to select a group where such communication was already active and nurtured.

The group of 120 people, consisting of adult men and women from tribal households and a local health facilitator was selected. Number of Members of the group was changed somewhat over the period of observation. It reflects normal digital group dynamics.

No new member was added by the researcher. Participation in discussions was done voluntarily in the existing digital environment.

3.4 Data Collection

Data were collected through systematic non-participant digital observation over a three-month period. All messages posted in the group related to health were archived. These included text messages, images, short videos and voice notes. Voice notes were transcribed verbatim. Messages that were originally posted in Hindi were translated into English without compromising communicative meaning.

The final dataset consisted of:

- 231 health-related messages
- 190 participant responses
- 41 clarification-related questions directed to the health worker
- 20 instances of message forwarding or sharing within or outside the group
- 30 instances where posts received no response

Field notes were kept in order to make contextual observations such as time of posting, clustering of responses, silence after certain topics and repeated questions regarding particular health topics.

Only those discussions that were related to health were included in the dataset. Personal conversations that did not relate to health issues were not included.

3.5 Analytical Approach

Using Grounded Theory developed by Barney and Strauss, data analysis was conducted through Inductive reasoning, constant comparison and theoretical sampling to develop explanatory themes. The analysis proceeded in three stages, which were interrelated.

First, all the transcripts were read several times to identify repeated communication actions such as questioning, sharing, acknowledging, ignoring or reporting visits to health centres. Each discrete communicative act was coded without pre-imposing predetermined categories.

Second, similar communicative acts were grouped together in order to identify broader patterns. For example, repeated requests for dosage clarification and confirmation of an appointment were grouped under information-seeking interaction.

Third, these patterned interactions were analysed in relation to the research questions to build up an explanatory understanding of how WhatsApp works as a communication system in this tribal context.

Total **46 initial open codes** were generated. These were clustered into **12 categories (axial codes)** and further synthesized into **4 themes**.

Open Codes (Illustrative List)

- Asking about vaccination dates
- Pregnancy danger signs queries
- Sharing childbirth experiences
- Voice-note preference
- Video preferred over text
- Low response to diet tips
- Seasonal disease concern
- Fever management questions
- Water purification discussion
- Handwashing practice adoption
- Message forwarded to family
- Trust in ASHA worker message
- Reposting health poster
- Request for doctor appointment
- Thanks giving messages
- Rumour clarification
- Fear of side effects
- Distance to clinic
- Transport difficulty
- Reminder for clinic visit
- Peer encouragement
- Audio explanation request
- Local language usage
- Short message preference
- Danger signs
- Evening-time engagement peak
- High Women participants
- Men ask facility-related questions
- Sharing home remedies
- Asking medicine availability
- Child immunization card query
- Photo of wound shared
- Request for home visit
- Concern about malaria
- Mosquito net discussion
- Precaution reminder
- Reposting government advisory
- Asking cost of treatment
- Dosage clarification
- Family planning query
- Hygiene question

- Baby feeding query
- Confirmation of an appointment
- Expressing relief after advice
- Thanking health worker
- Acknowledging receipt

Total Open Codes: 46

Axial Codes (Categories)

Axial Category	Linked Open Codes (Examples)
Information Seeking	Vaccination date queries, dosage clarification, Confirmation of an appointment
Experience Sharing	Childbirth stories, home remedy sharing
Format Preference	Voice-note preference, video preferred
Trust & Credibility	Trust in ASHA message, reposting official advisory
Emotional Response	Relief, appreciation, danger signs
Action Orientation	Reminder for clinic visit, Mosquitonet usage
Access Barriers	Transport difficulty, distance to facility
Gendered Participation	Women active, men facility queries
Peer Reinforcement	Encouragement, forwarding
Rumour Management	Clarification, correction
Language Accessibility	Local dialect usage
Passive Engagement	Acknowledging receipt

Selective Themes

1. WhatsApp as an Interactive Health Communication Medium
2. Engagement Driven by Perceived Urgency and Relevance
3. Trust in Frontline Health Workers Shapes Participation
4. Topic-Based Engagement Variability

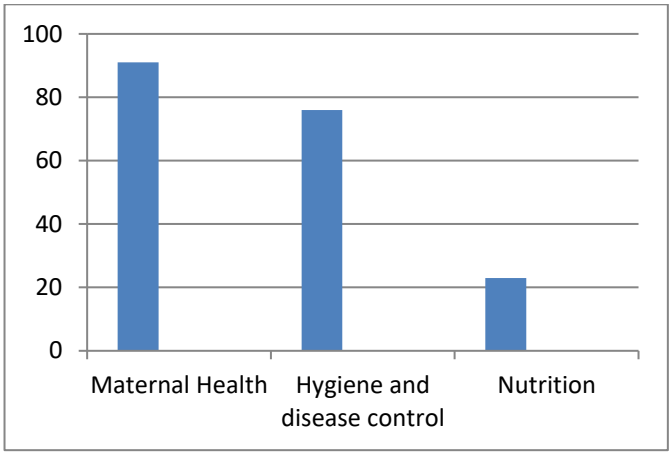
3.6 Quantitative Descriptive Mapping of Engagement

Although the study was qualitative in orientation, descriptive frequency counts were used to map engagement intensity across behaviours, topics and message formats.

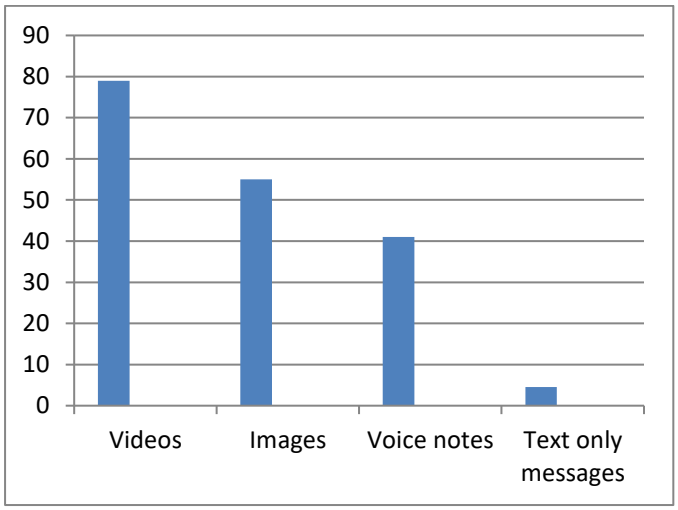
The data showed that of the 190 responses recorded, acknowledgment only responses (72) and clarification questions (41) were the major interactions. 20 messages were actively shared and 27 instances contained reports of visiting a health centre, scheduling immunization or consulting the ASHA worker after receiving a message. 30 posts received no response.

Topic wise distribution showed that maternal health posts produced maximum engagement (91 interactions) followed by hygiene and disease control (76). Nutrition-related posts had a relatively low level of interaction (23), suggesting topic-specific attention hierarchies.

Format-wise distribution showed that short videos created the most engagement (79 interactions), followed by images (55), voice notes (41) and text only messages (15). This suggests that audio-visual formats improve accessibility in low literacy area.



Topic wise engagement distribution



Format-wise engagement distribution

3.7 Integration with Management-Oriented Systems Model (MOSM)

Management Oriented Systems Model can explain the results of this study. This modeldoes not view communication as isolated message transmission. It explains communication as

an organized system with structured inputs, mediated processes, observable outputs, service-oriented outcomes and adaptive feedback loops. In this system, communication is considered as a controlled operational mechanism rather than a spontaneous exchange of information.

In this WhatsApp group, institutional health communication was the main input of the system. These inputs were maternal health advisories, immunization reminders, hygiene and disease prevention messages and service announcements through the moderator.A frontline ASHA worker was the moderator here. These inputs were not random digital content. All messages were based on public health programs and routine service schedules. This is like a formal health communication entering in digital community space.

The WhatsApp platform served as the communication spacefor the system. Traditional platforms are one-way channels of information dissemination. However, WhatsApp allowed for both broadcasting and interaction at the same time. In the process stage of communication, it included not only posting of messages, but also peer discussion, clarification of doubts and moderator facilitation. The platform offered text, voice notes, images and short videos in interactive format. In this sense WhatsApp served as a structured communication infrastructure. It helped to translate institutional formal content into informal dialogue for the community.

Engagements in the group like clarification questions, message acknowledgments, peer sharing acted as measurable system outputs. These outputs are significant from a mass communication perspective because they tell us the extent to which messages go beyond exposure into interaction. The existence of structured questioning, the repetition of the dosage or vaccination schedule enquiries and the exchange of messages within family networks proves that communication was not just received, but actively processed within the community's digital environment.

Beyond the output, the study identified some observable service-oriented outcomes associated with the flow of communications. Members reported increased visits to health centres after maternal health posts, scheduling of immunization appointments after vaccination reminders and more frequent consultation with ASHA workers after disease-related messages. These actions are the visible public health consequences of the communication system. Importantly, these outcomes were not interpreted as internal behavioural change constructs but visible service engagement indicatorsas health centre attendance, immunization participation and frontline worker interaction.

A defining feature of the MOSM is its feedback mechanism and this was clearly visible within the WhatsApp group. Clarification queries had short response times from moderators. Repeated questions asking about similar issues led to re-posting of simplified explanations or voice notes. When some topics did not generate a lot of engagement, subsequent messages were reformatted or represented in other media formats. This adaptive messaging shows that communication within the group was cyclical instead of linear. Messages did not end with dissemination, but re-entered the system through discussion, correction and reinforcement.

From a mass communication perspective, this cyclical pattern sets WhatsApp communication apart from traditional communication models of broadcast. In conventional mass media, feedback is delayed or indirect. In contrast, there were immediate micro-level feedback loops in the Dharani WhatsApp group. The system thus constituted a system of managed communication that combined institutional authority and local participation.

The MOSM interpretation also identifies the degree of variation in the intensity of engagement based on topic and format. Maternal health and immunisation messages resulted in higher levels of output than those related to nutrition. Similarly, short videos generated more interaction than text messages. These patterns suggest that system efficiency is not only dependent on the content of the messages, but also on the format as per community communication practices. In a low literacy tribal context, the use of audio-video communication was more accessible and therefore more output oriented.

Moreover, the integration of institutional inputs and the tribal interpersonal networks is central to understanding the performance of the system. The WhatsApp group was a digital extension of conversation in the community. Members frequently required confirmation before visiting health centres which indicated that digital discussion reinforced rather than replaced an offline consultation. This platform acts as a hybrid communication ecologyfor mediated communication and face-to-face communication. This digital platform serves as a support for existing tribal communication structures.

In summary, integration of the findings with the Management-Oriented Systems Model shows that WhatsApp group in Dharani functions as a structured health communication system. Here inputs are organized, dissemination processes are mediated, engagement outputs are measurable, service-oriented outcomes andfeedback loops are observable. The platform is not only to relay messages, but alsoto manage communication environment. It also supports institutional health programs and tribal community interaction to facilitate more health centre visits by community members, scheduling immunisation and consultation with ASHA workers.

3.8 Ethical Considerations

Institutional ethical approval was done for the data collection. Group administrators were summarised about the study purpose. Identities of all group participants were anonymised. Data were securely archived and were only used for academic purpose.

4. Discussion

This study explored use of WhatsApp as a community-based health communication system in a tribal region of Dharani in Maharashtra. The results show that WhatsApp can act as not only a digital messaging application but also an organized communication infrastructure. It also linked institutional health programs and community interaction with the tribal community. When we interpretedstudy through the Management-Oriented Systems Model (MOSM), the WhatsApp platform explains communication as an organized system with structured inputs, mediated processes, observable outputs, service-oriented outcomes and adaptive feedback loops. Maternal health and immunisation messages generated the greatest levels of interaction whereas nutritionrelated posts received reasonably low levels of engagement. Short videos and images generatedmore responses than textonly messages. It also shows observable outcomes as increased health centre visits, scheduling of immunisation and more consultation with ASHA workers. These findings can be presumed in the larger context of National Tribal Health Policy and Mass Communication Strategy.

Under National Health Mission (NHM), Tribal Sub-Plan initiative prioritises better access to primary healthcare. It also strengthened frontline worker networks and improved immunisation coverage to tribal population in underserved and remote areas. However, effectiveness of this plan is still affected by structural barriers like geographic isolation, transportation limitations and communication gaps. In addition to infrastructural barriers, communication challenges also affect policy implementation in tribal communities. Many tribal populations are relatively shy and less expressive. They feel reluctant in formal institutional settings and cautious in openly questioning of doubts. Their way of communication is reserved and community centred. This does not mean lack of interest but rather cultural communication pattern which is based on trust, familiarity and gradual acceptance.

For this reason, one-time dissemination of information or campaign style of messaging is not helpful for health communication in tribal areas. Sustained dialogue, repeated explanation and trust-building over the period of time can be best tool to convince tribal households to adopt recommended health practices. Tribal communities are often simple in expectations and value clarity and personal reassurance. For their health development, the institutional systems have to come out and take proactive steps instead of expecting immediate self-driven participation. Persistent communication presence - not broadcast messages - is thus critical for tribal health progress.

The present findings suggest that WhatsApp can be used as a complementary layer of communication in national health systems. Rather than replacing traditional outreach, the platform reinforces coordination between ASHA workers and households. The increase in queries directed to ASHA workers after digital messages suggests that WhatsApp improves the visibility and accessibility of frontline workers. Digital interaction appears to reduce hesitation and provide friendly environment for initial clarification before physical consultation. This supports national policy which emphasis on communitylevel facilitation as the basis of tribal health service delivery.

The observed rise in immunisation scheduling after digital reminders is directly related to the goals of Universal Immunisation Programmes. In remote tribal areas physical reminder systems may be inconsistent due to the constraint of mobility. WhatsApp-based reminders especially with images and voice notes are a way to ensure timely communication to reinforce routine health services. Importantly, the patterns of engagement found in this study - clarification queries, repeated discussions and peer sharing - suggest that communication went beyond the exposure of information into participatory exchange. Engagement thus becomes a policyrelevant indicator. Health departments can use engagement intensity as a practical monitoring tool, identifying the increasing service demand based on increasing questioning or discussion around specific topics.

The MOSM framework further explains how digital platforms can be used to strengthen decentralized public health governance. Institutional health messages are structured inputs into the system. WhatsApp is processing these inputs through dissemination and interaction. Engagement behaviours are a measurable output, while increased health centre visits and immunisation participation is an outcome-oriented service. The feedback loops seen - the way that repeated questions generated a need for re-explanation and topics of low engagement were reformatted into short videos or audio notes - are examples of adaptive communication management. In geographically remote tribal settings, where there is less supervisory infrastructure, such adaptive digital systems enable frontline workers to recalibrate communication in real-time without the need for additional physical resources.

The fact that people prefer short videos over text messages underscores an important equity question in digital health policy. Many national digital initiatives focus on apps-based platforms that require reading proficiency. However, in tribal settings where the traditions of oral communication are still strong and literacy levels are not high, audio-supported messaging goes a long way toward improving accessibility. Communication therefore requires sensitivity to format rather than simply the expansion of digital format.

From a mass communication perspective, this study shows that effective tribal health outreach is based on systems rather than messages. WhatsApp in Dharani tribal area was a communication network managed between institutional authority and community participation. Engagement was not incidental; it was structurally embedded in the communication process. Integrated digital media when combined with frontline facilitation, can reach out into the everyday

community conversation to extend the reach of public health programs.

Ultimately, tribal health development needs constant, patient and persistent communication. One-time awareness campaigns are not sufficient. Sustained interaction, repeated reinforcement and gradual building of trust is required to promote increased visits to health centres, uptake of immunisation and consultation with ASHAs. Tribal health development is incremental and relational. It can be assisted by incorporating structured digital engagement in national tribal health policy. Digital engagement in public health systems can provide continuity of communication over the long term and can addinclusive health development strategy in remote tribal areas.

5. Limitations and Future Research

This study provides significant information on WhatsApp-based health communication in a tribal area of Dharani in Maharashtra. Still there are some limitations that should be noted. The research was carried out in a single WhatsApp group in one geographical location. Tribal communities across India are very different in culture, language and tradition. They also have different percentage of access to digital. Therefore, findings may not be directly generalizable in other tribal settings. Future studies should replicate similar studies in more than one district so that comparisons can be made.

The study was based on observation of natural occurrences of digital interactions. While this increased authenticity, it did not record offline discussions or unreported health actions that may have occurred after message exposure. Some members may have visited health centres or scheduled immunisation without posting responses. Integrating interviews or primary health centre records in future studies will provide a better linkage between digital engagement and service utilization.

The research was also focused on the short-term patterns of engagement rather than the long-term health outcomes. Sustained impact needs to be assessed using longitudinal studies.

Additionally, demographic disparities and misinformation dynamics were not explored in-depth. Future studies should investigate these dimensions and evaluate scalability of structured WhatsApp communication in national tribal health programs.

6. Conclusion

This study discussed WhatsApp as a structured community-based health communication system in a tribal area of Dharani, Maharashtra. The findings demonstratethat WhatsApp is not simply a messaging tool, but an organized communication infrastructure between institutional health programs and community engagement in the tribal area. Maternal health and immunisation messages generated the highest engagement; comparatively low response was received to posts related to nutrition. Short videos and images were more effective than text-only messages, providing evidence of the importance of format accessibility in tribal settings where oral communication practices are strong.

Observable outcomes were increased visits to health centres, scheduling of immunisation appointments and increased consultation with ASHA workers. These results indicate that digital communication, when combined with frontline facilitation of health services, strengthens, rather than replaces offline service utilization. Interpreted through the Management-Oriented Systems Model (MOSM), WhatsApp functioned as a structured system in the form of institutional inputs, mediated processes, measurable engagement outputs, service-oriented outcomes and adaptive feedback loops.

The research also highlights the fact that sometimes tribal communities need long-term and patient communication efforts. Being relatively reserved and less expressive in formal settings, they have a slow response time to consistent and reassuring outreach. Therefore, sustained involvement is critical to tribal health development.

From a policy point of view, structured WhatsApp groups moderated by ASHA workers can be cost-effective extensions of primary healthcare outreach under national tribal health initiatives. Sustainable tribal health improvement requires ongoing, accessible and adaptive communication systems within community networks.

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