SHORT ARTICLE

Reinforced Media Communication Improves Turnout in Pulse Polio National Immunization Days: "Findings from a Grounded Theory Approach" from an Immunization Clinic in Odisha, India

Sonali Kar[1], Liwa Patnaik[2], Sneha Bhowmick[3], Angana Ray[4], Rosy Nayak[5], Baishnabi Pattnaik[6], Gouri Kumar Rath[7]

[1,3,4,5,6,7]Department of Community Medicine, Kalinga Institute of Medical Sciences (KIMS), KIIT University, Patia, Bhubaneswar, Odisha

[2]Department of Community Medicine, Shri Jagannath Medical College and Hospital, Puri, Odisha

CORRESPONDING AUTHOR

Dr Sonali Kar, Professor and Head of the of the Department of Community Medicine, Kalinga Institute of Medical Sciences (KIMS), KIIT University, Patia, Bhubaneswar, Odisha, India

Email: sonsam72@yahoo.co.uk

CITATION

Kar S, Patnaik L, Bhowmick S, Ray A, Nayak R, Pattnaik B, Rath GK. Reinforced Media Communication Improves Turnout in Pulse Polio National Immunization Days: "Findings from a Grounded Theory Approach" from an Immunization Clinic in Odisha, India. Indian J Comm Health. 2025;37(3):481-484.

https://doi.org/10.47203/IJCH.2025.v37i03.020

ARTICLE CYCLE

Received: 06/05/2025; Accepted: 18/X6/2025; Published: 30/06/2025

ABSTRACT

Background: To maintain India's polio-free status since March 27, 2014, periodic Pulse Polio National Immunization Days (NIDs) continue to be critical for preventing resurgence, especially in states in the north and east of the country, given their proximity to neighboring nations, wherein cases of Polio persist. However, participation in these campaigns has declined, potentially due to reduced media reinforcement. **Objectives**: To explore how reinforced media communication influences community participation in NID pulse polio campaigns during the elimination phase. **Methods**: According to the grounded theory methodology, a survey was conducted at an urban immunization clinic in Bhubaneswar, Odisha, during the January 2024 NID, and the performance was compared to that of the 2022 NID. Thirty caregivers were interviewed using semi-structured guides for in-depth impressions. Data was analysed through open, axial, and selective coding to generate themes, develop an emergent theory, and matched against the actual quantitative figures reported in the years of the campaign being considered i.e. 2022 and 2024. **Results**: Three major themes emerged: A. Reinforced Media as an enabling behavioural trigger; B. Trust through repetitive authoritative messaging; and C. Normalization via community behaviour. The core theory suggests that reinforced media communication fosters a sense of urgency and collective responsibility, which improves turnout. Using the media dissemination for 2024, a nearly 99% increase was seen in the recipients of the Polio vaccine in 2024 as compared to 2022. **Conclusion**: Reinforced and culturally sensitive media communication remains crucial even in the polio elimination phase. Sustained investment in strategic media messaging should be integral to NID planning and micro-implementation.

KEYWORDS

Pulse Polio, Media Communication, Immunization, Grounded Theory, Public Health, India

INTRODUCTION

India was declared polio-free in 2014 (1). Despite this achievement, the risk of reintroduction, due to global mobility and residual reservoir, necessitates ongoing vigilance through National Immunization Days (NIDs) for pulse polio (2). In recent years, health workers have observed the declining turnout at immunization booths, especially in urban and semi-urban areas (3).

Mass media has historically played a pivotal role in community mobilization for immunization. However, in the elimination phase, media

engagement has waned, affecting public motivation. This study aimed to explore, through a grounded theory approach, how media communication influences participation in NID activities in an urban context.

Material & Methods

Study Design and Setting: Grounded theory methodology was employed at a private-run immunization clinic in Bhubaneswar, Odisha, during the January 2024 Pulse Polio NID, which is an exploratory approach used when data sample is limited and large sample constraints are there. The outcome, specifically the turnout number of participants, was then matched against the 2022 NID data, which did not include a similar media campaign. Usually, nearly 2 weeks ahead of the planned date of NID, an official communication comes to the vaccination point at the hospital, to make necessary arrangements for the campaign. The letter also encourages mass campaigning in the catchment areas to maximize the turnover, and accordingly, vaccine vials are indented by the Nurse managing the clinic for the NID. For the year 2022, no such campaign was done by the clinic, except for the television messages on behalf of the state government, notifying the public about the campaign. In 2024, the staff cognizant of the poor turnover in 2023, made multiple efforts a priori to the NID, like videos informing public regarding the relevance of the OPV on a single day, talks by doctors and even frank motivation to all beneficiaries who came for routine vaccination at the clinic. All these was done during the 2 weeks before the NID.

Participants: All parents of children under 5 years, who volunteered to administer the Oral Polio vaccine to their children at the selected clinic on the day of NID. 30 caregivers of children under five years were recruited for an in-depth interview using purposive sampling.

Data Collection: Semi-structured interviews were conducted using a flexible guide focusing on sources of information, motivation for participation, and perceptions of media messages. Interviews of the subset of 30 caregivers who consented were audio-recorded and transcribed verbatim. Supplementary field notes and observations from the clinic and surrounding community were also recorded.

Data Analysis: Quantitative data was tabulated using frequency and proportions to give sample characteristics. The qualitative interviews were analysed using grounded theory procedures: open coding, axial coding, and selective coding. NVivo 12 software was used for data management and coding. An emergent theory was developed based on the saturation of categories and thematic relationships after testing for interceding variability.

Ethical Considerations: Permission from hospital authority was taken for the in-house activity and full ethics committee review was waived. Written informed consent was obtained from all participants. Data confidentiality and anonymity were maintained throughout the study.

Results

A total of 297 beneficiaries took Oral Polio Vaccine on the NID day of 2024.Table 1 shows that 62% of the time, mothers were the accompanying persons, and 27.3% times the fathers. The age range of guardian was from 19-63 years, the mean was 33.75±6.55 years. The caregivers were well educated i.e. 77.5% were graduates and above the mean age of the children vaccinated was 28.48±18.48 months and near proportionate turnover was seen for age groups over 12 months i.e. nearly 20%, but less numbers in the age groups less than 12 months. Male children were higher than females. Interestingly, guardians seeking their routine vaccinations at other government or private clinics, came to the facility for the NID session and higher turnout was in the forenoon as compared to afternoons.

Table 1: Sample characteristics of the recipients of OPV

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Respondent's Age (in years)	297	19	63	33.75	6.552
Baby's Age (in months)	297	1	60	28.48	18.486
Categorical variables					
For respondent (n=297)			For participant (n=297)		
Variable	Frequency	Percentage	Variable	Frequency	Percentage
Gender			Age category (in months):		
Male	93	31.3	0–12	93	31.3
Female	204	68.7	13–36	121	40.7
Relation with child:			37–60	83	28

Parents	265	89.2	Gender:		
Grandparents	12	4	Male	161	54.2
Extended Family (including siblings, uncles, aunts)	20	6.7	Female	136	45.8
Age category:			Polio services related questions:		
≤30 years	91	33.7	Where was the last vaccination taken from?		
31–40 years	198	66.7	KIMS	145	48.8
>40 years	9	3	Govt (AWC, Hospital)	92	31
Education level:			Private (non-KIMS)	60	20.2
Higher Education (Graduate, Postgraduate)	230	77.4	Why did you choose KIMS?		
Intermediate Education (Diploma, Secondary School)	61	20.5	Proximity	154	51.9
Basic or No Education (Primary School, No Formal Education)	6	2	Staff/ relative	69	23.2
Occupation:			Did you like the service here?		
Working	198	66.7	Yes	253	85.2
Not working	99	33.3	No	44	14.8
Distance of home from KIMS (in km)			Time transpired (in minutes)		
≤5	274	92.3	≤6	198	66.7
>5	23	7.4	>6	99	33.3
Transport Category used to attend KIMS Immunisation centre:			Time of the day preferred		
Private Transport (car, bike/scooty)	221	74.4	Forenoon	167	56.2
Walking and Non-Private Transport (bus, auto)	76	25.6	Afternoon	130	43.8

Qualitative data: 30 in-depth interviews were taken of willing guardians to understand their motivation for this exercise. Mostly i.e. 77% were mothers of which 45.5% were homemakers. The interview transcripts were coded and the following themes were isolated.

Theme 1: Media as an enabling Behavioural Trigger-

Caregivers reported that when they heard or saw media messages—via television, mobile SMS and community loudspeakers—they were more likely to attend the polio booth. Parents said, "We did not know that this dose of polio is excess to all doses being given, my infant took it twenty days ago, at 9 months and I thought she wasn't to be vaccinated, but the detailed video telecast being messaged by the hospital staff dispelled my doubts". This is also evident from the low proportion of <12 months children who came for the NID.

Theme 2: Trust through Repetitive, Authoritative Messaging

Repetition of messages from trusted sources—such as government figures, hospital staff, and immunization team—helped establish importance and credibility. This is evident from the data wherein residents from more than 10km also chose this clinic to vaccinate their child and also those who did not routinely vaccinate their children at this facility, but turned up for the NID campaign. Guardians admitted that the repeated messaging over 2 weeks, in a way compelled them to get their toddler for the vaccine.

Theme 3: Normalization via Community Behaviour

Mass media reinforcement created a community norm where immunization was perceived as an expected action. When the people were asked what was their source of information for the NID, almost 91.5% attributed it to the media campaign by the immunization clinic, and the rest also indirectly

heard it as a word-of-mouth dissemination by the hospital staff and their relatives.

Emergent Theory: The core theory developed was that reinforced media communication regenerates urgency and trust, which ensures normalized participation in Pulse Polio NIDs. Lack or poor reinforcement leads to perceived irrelevance, especially in polio-free settings.

This theory was further validated by comparative analysis of OPV uptake during NID in 2022, which was only 149 children received OPV at the clinic, whereas in 2024 following an intensive media campaign conducted by the hospital staff, the number increased significantly to 297. Although there was a two-year gap in the conduct of NID campaigns, this represents a 99% rise in OPV coverage, highlighting the significant impact of reinforced media communication on immunization turnout.

Discussion

This study highlights that media messaging remains a critical component of successful immunization campaigns (4,5). Even in a post-eradication context, where disease visibility is low, media serves as a behavioural cue and builds trust.

Our findings are supported by other Indian studies emphasizing the role of media in vaccine uptake (6,7,8). The implications are particularly significant for urban and peri-urban populations where mass outreach is fragmented. The narrative accounts presented here humanize the data, demonstrating the real-world consequences of communication lapses. This is single centre data but generating undeniable evidence of improved outcomes during NIDs if they are preceded by mass media campaigns.

Grounded theory provided a useful lens to generate context-specific, process-oriented insights into behavioural change mechanisms.

Conclusion

Reinforced, multi-platform media communication is essential for sustaining community participation in pulse polio NIDs. Media must be treated as a core strategy in immunization planning, not a supplementary component. Reviving and contextualizing media efforts may help prevent missed children and sustain polio-free status.

Recommendation

- Integrate media planning into NID microplans at the block and district level.
- Use local media (e.g., community radios, religious loudspeakers) to reinforce messages.
- Leverage mobile platforms and trusted influencers for urban outreach.

Authors Contribution

All authors have contributed equally.

Financial Support and Sponsorship

Nil

Conflict of Interest

There are no conflicts of interest.

Acknowledgement

We thank the caregivers, ASHAs, ANMs, and staff at the immunization centre in Bhubaneswar for their support and insights.

Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

References

1.John TJ, Vashishtha VM. Eradicating poliomyelitis: India's journey from hyperendemic to polio-free status. Indian Journal of Medical Research. 2013 May 1;137(5):881-94.

2.Bahl S, Kumar R, Menabde N, Thapa A, McFarland J, Swezy V, Tangermann RH, Jafari HS, Elsner L, Wassilak SG, Kew OM. Polio-free certification and lessons learned—South-East Asia region, March 2014. MMWR Morb Mortal Wkly Rep. 2014 Oct 24;63(42):941-6.

3. Lahariya C. Global eradication of polio: the case for" finishing the job". Bulletin of the World Health Organization. 2007;85:487-92.

4.Argyris YA, Nelson VR, Wiseley K, Shen R, Roscizewski A. Do social media campaigns foster vaccination adherence? A systematic review of prior intervention-based campaigns on social media. Telematics and Informatics. 2023 Jan 1;76:101918

5. Odone A, Ferrari A, Spagnoli F, Visciarelli S, Shefer A, Pasquarella C, Signorelli C. Effectiveness of interventions that apply new media to improve vaccine uptake and vaccine coverage: a systematic review. Human vaccines & immunotherapeutics. 2015 Jan 1;11(1):72-82.

6. Das MK, Singh D, Sharma S. Media news on vaccines and vaccination: The content profile, sentiment and trend of the online mass media during 2015–2020 in India. Clinical Epidemiology and Global Health. 2021 Apr 1;10.

7. Dudeja N, Khan T, Varughese DT, Abraham SG, Ninan MM, Prasad CL, Sarkar R, Kang G. Technologies for strengthening immunization coverage in India: a systematic review. The Lancet Regional Health-Southeast Asia. 2024 Apr 1;23.

8. Johri M, Chandra D, Kone KG, Sylvestre MP, Mathur AK, Harper S, Nandi A. Social and behavior change communication interventions delivered face-to-face and by a mobile phone to strengthen vaccination uptake and improve child health in rural India: randomized pilot study. JMIR mHealth and uHealth. 2020 Sep 21;8(9):e20356.