Social Media and Nutrition Communication: Measuring the Reach and Engagement during the 2022 Nutrition Month Campaign in India

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Abstract

Objective: This study assesses the reach of nutrition messaging on social media during the POSHAN Maah campaign in September 2022, in India.

Methods: It was a mixed method research. Digimind software was used to track and analyze nutrition messaging. The metrics used for analysis were message volume, Reach, engagement, and sentiment analysis.

Results: Out of the 7 most popular hashtags identified, 85% of the time, people used #Poshanmaah2022 to spread the message for nutrition promotion. This hashtag reached 13 million people, accounting for 39% of the total Reach of all 7 identified hashtags. Sentiment revealed that 87% of the messages were positive.

Conclusion and Implications: This study found that people actively shared nutrition-related messages; however, the shared nutrition information lacked context. There is a need to develop clear and concise messages with simple language and visual aids to the local context.

Key Words: nutrition messaging, social media, and awareness.

I.   Introduction

Effective communication that conveys the right message at the right time can significantly impact public opinion and promote social change, particularly when combined with consistent messaging, follow-ups, and engagement. According to Andrien (1994), nutrition communication involves campaigns and activities that provide individuals and society with nutrition information, knowledge, and practices to promote behaviour change and improve nutrition outcomes. Rumi Aijaz (2017) highlighted in a policy brief that malnutrition is prevalent in many countries, including India, due to ignorance of healthy diets, unhealthy feeding and caring practices.

In 2018, the Prime Minister of India launched the POSHAN Abhiyan program to improve key nutrition parameters in children, adolescents, and lactating mothers (Press Information Bureau (PIB), 2021). The program's Jan Andolan and community mobilization strategy were crucial for raising awareness and promoting nutrition-seeking behaviours among the population. POSHAN Maah[1] and POSHAN Pakhwada,[2] celebrated in September and March, are annual events that generate undivided attention towards nutrition-related issues. Institutions and governments promote nutrition-seeking behaviours within the communities under this broad approach. The Ministry of Women and Child Development (MoWCD) issued Jan Andolan guidelines (MoWCD, 2021) on nutrition communication and messaging under the POSHAN Abhiyan. These guidelines offer thematic messages and platforms for disseminating nutrition information.

Social media platforms such as Facebook, Twitter (Now renamed as X), and Instagram have become increasingly popular for sharing health and nutrition information with a broader and more diverse audience than traditional print media (Chan J, 2013). According to Business Quant (Investment research platform) published data, 23.79% of the world's population uses Facebook daily, and Twitter (X) has around 328 million monthly active users worldwide (Dixon, 2023). Despite the growing use of social media for health information sharing, little is known about the quality and validity of information shared on these platforms (Subba Rao M, Gavaravarapu, 2018). Evaluating the content, Reach, geographical coverage and sources of information shared on social media is essential in analyzing the sensitivity of nutrition information and communication campaigns.

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[1] "POSHAN Maah" meaning Nutrition Month
[2] "POSHAN Pakhwada" meaning Nutrition Fortnight

II.   Methods

Study Design

This study was done using mixed-method research. Both primary and secondary data were used. For the analysis of nutrition messaging on social media, Digimind software was used to retrieve the social media information and reach. In-depth Interviews (IDIs) and Focused Group Discussions (FGDs) were conducted at the community level to assess community awareness and the communication channels being used for nutrition information dissemination at the community level. The researchers selected the hashtags after extensive deliberations with nutrition communication experts and social media analysts. We searched for hashtags like #PoshanMaah2022, #PoshanAbhiyan, #NutritionWeek, #Poshan, #NutritionMonth2022, #PoshanPanchayat, and #PoshanSeRoshan at three different levels - international, national, and city level. The research team found that '#PoshanMaah2022' hashtag was the most trending hashtag on social media platforms for nutrition messaging and was subsequently used for this analysis.

Participants of the study

Social media users who took part in nutrition messaging during PoshanMaah 2022 passively participated.

Data Collection and Analysis

Using Digimind, the researchers collected mentions of the selected hashtags in a dashboard report. They then analyzed the data using various filters to clean up, group, mark, and delete irrelevant mentions. The analysis focused on the social media mentions' volume, engagement, Reach, sentiment, and influence metrics.

Digimind, a software tool for social media content analysis, was selected for the study analysis. The researchers prepared a framework for social media content analysis using Digimind with the help of subject matter experts. They extracted separate datasets for Facebook, Twitter (X), and Instagram. To interpret the data, the study considered the following operational definitions of Digimind for social media analysis;

- Social Media: Social media encompasses a collaborative array of websites and applications designed for communication, facilitating community participation, forming networks, and fostering interactions among groups of individuals for sharing content.
- Estimated Reach: Estimated Reach denotes the number of individuals who are exposed to a particular piece of content, measured by the count of unique views. Reach constitutes a significant metric for assessing social media engagement, offering a reliable estimation of the extent to which a topic is exposed within the realm of social media.
- Mention: Mention refers to the frequency with which a specific topic or word is directly referenced in social media posts generated by individuals engaged in the discourse.
- People Talking About: People talking about quantifies the overall number of individuals involved in communication about a given topic within social media.
- Social Interactions: Social interactions encompass a range of activities, such as likes, shares, retweets, and comments, that users engage in to interact with content on social media platforms.
- Sentiment Analysis: Sentiment analysis aids in comprehending the collective behaviour and perceptions of the general public with regard to the topic under discussion.

In addition to conducting social media analysis, the study investigated the awareness and perception of community members regarding nutrition-related messages. This assessment was carried out through in-depth interviews with frontline workers and focused group discussions (FGDs) involving community members residing in the urban slums of Delhi. The primary data collection occurred within one week after the conclusion of the Rashtriya Poshan Maah campaign. A total of 44 in-depth interviews were conducted, with 12 Accredited Social Health Activists (ASHAs) and 32 Anganwadi workers. Furthermore, 3 FGDs were also conducted, which included adolescent girls, pregnant women, and lactating mothers as participants. All interviews and FGDs were conducted in the local language, Hindi.

Ethical Approval and Consent

The study was approved by the internal review committee of Save the Children and was exempted from a full IRB process. Written consent was taken from each participant before the interview and group discussion. There was no financial assistance received for this study, and the authors declare no conflict of interest.

III.   Results

The trend analysis of nutrition messaging on social media showed that messaging and engagement on social media platforms were highest during the 1st week of September, which kicks off as nutrition month in India. This could be because of the widespread Reach of the Prime Minister's 'Mann Ki Baat' programme, which focuses on the PoshanAbhiyan and the improvement of nutrition, broadcasted on the 28th of August 2022, where

Hon'ble PM of India urged citizens to participate in POSHAN Maah celebrations. Towards the 4th week of September 2022, the daily volume of messaging reduced by around 75% of its peak and further stagnated thereafter. Day 1st of the 'POSHAN Maah' recorded the highest number of mentions, which were around 2762. The lowest engagement was reported on 24 September, with only 414 mentions.

Table 1.1: Nutrition discourse on social media and Reach (From 1st Sept 2022 to 30th Sept 2022)

Sr No	Hashtag	Number of People Talking About	Number of Mentions	Total Reach (persons)	Gender	
					Male (%)	Female (%)
1	#Poshanmaah2022	33000	48000	13000000	78	22
2	#Poshan	1000	2000	13000000	71	29
3	#PoshanAbhiyan	733	1000	5000000	76	24
4	#NutritionWeek	4000	6000	2000000	64	36
5	#PoshanSeRoshan	35	58	38000	88	12
6	#NutritionMonth2022	48	80	23000	52	48
7	#PoshanPanchayat	15	24	10000	50	50

Social media has witnessed a considerable amount of engagement in nutrition information sharing. This study revealed that hashtag "#Poshanmaah2022" was used most on social media during 'POSHAN Maah' amongst the 7 most trending hashtags used to disseminate nutrition information. Around 69.4% of messages include this hashtag on social media platforms. This study found that approximately 13 million people were exposed to these messages, and they read the nutrition messages being disseminated on social media platforms. They reacted to the post by others which mentions #Poshanmaah2022. It is estimated that an average of 33000 persons were engaged in information dissemination on social media platforms. These people or institutional accounts posted content on social media platforms using #Poshanmaah2022. Around 48000 nutrition-related messages were delivered during POSHAN Maah. The general statistics of the nutrition discourse on social media platforms from Sept 1, 2022 to Sep 30, 2022 is mentioned in Table-1.1.

The sentiment analysis of social media engagement around nutrition during 'PoshanMaah' provided helpful information on public sentiments, attitudes, and opinions. The sentiment analysis for 2044 messages revealed that 87 % were positive sentiments, whereas 9% were neutral and 4% were negative sentiments. Here, the positive sentiments included messages which promoted nutrition and encouraged social media communities to participate in POSHAN Abhiyan or POSHAN Maah. In contrast, the negative sentiments mean the messages highlighting the prevalence of malnutrition in the country and describing India's numerous challenges. This analysis also provided details on languages used for nutrition education and communication on social media. It also offered geographic distribution of participants (users who created the posts) who engaged in this nutrition discourse on social media during Nutrition Month. Table 1.2 briefly summarises the social media content analysis findings for #Poshanmaah2022 during nutrition month.

Table 1.2: Nutrition discourse on social media   (#PoshanMaah2022, From 1 Sept 2022 to 30 Sept 2022)

Category	Estimated Reach	Interactions	People talking about	Mentions
Total count	13000000	76556	33000	48000

According to the analysis, the estimated Reach for nutrition-related messages with #Poshanmaah2022 was 13 million. Out of 13 million people who read the message, 76556 people interacted with each other (Table 1.3). This interaction was in the form of likes, shares or comments on the posts, which included nutrition information.

Table 1.3: #PoshanMaah2022 (From Sept 1, 2022, to Sept 30, 2022)

Sr No	Particular		n (numbers from #PoshanMaah2022 hashtag only)	N (numbers from all 7 social media hashtags as shown above)	%
1	People talking about		33000	38831	85
2	Mentions		48000	57162	84
3	Estimated Reach		13000000	33071000	39
4	Sentiment of Participants	Positive	1778	2044	87
		Neutral	184	2044	9
		Negative	82	2044	4
5	Gender	Male	25740	33000	78
		Female	7260	33000	22
6	Age (Male)	Below 18	0	25740	0
		18-25	772	25740	3
		26-55	15186	25740	59
		Above 55	9781	25740	38
7	Age (Female)	Below 18	0	7260	0
		18-25	7260	7260	100
		26-55	0	7260	0
		Above 55	0	7260	0
8	City	New Delhi	12210	33000	37
		Mumbai	2640	33000	8
		Lucknow	1650	33000	5
		Chandigarh	1650	33000	5
		Hyderabad	1320	33000	4
		Other	13530	33000	41
9	Language	English	1381	2044	67.6
		Hindi	423	2044	20.7
		Marathi	69	2044	3.3

		Gujarati	62	2044	3.1
		Telugu	27	2044	1.3
		Bengali	36	2044	1.8
		Malayalam	14	2044	0.7
		Other	32	2044	1.5

IV.   Discussion

Thematic analysis of the content revealed that people were talking about POSHAN Maah and its theme, priorities and reasons for its celebration. Nutrition discourse also contains messaging about POSHAN Abhiyan and how this campaign has been a game changer in making people aware of nutrition and encouraging families to take necessary action to reduce malnutrition among women and children. It was stated that Poshan Abhiyan provides a platform for enhanced health & nutrition services to families. Some of the messages emphasized the importance of breastfeeding and other good practices for reducing child malnutrition and mortality. Further, it was identified that people, organizations and advocacy groups extensively discussed POSHAN Abhiyan, its objectives and outcome of the campaign. Most of them committed to supporting mothers & children by focusing on nutrition and good health. Apart from this, 'Call for Action towards better nutrition outcome', ' Nutrition information that included healthy diet and good eating practices, and reporting of Nutrition programmes or activities and Nutrition interventions made by Governmental organizations and Non-Governmental Organizations (NGO) were some of the key themes or areas around which people engaged themselves on social media.

When we looked at the geographical distribution of users participating in the nutrition discourse on social media, it was found that most of the messages were posted on social media from New Delhi during POSHAN Maah. Most of the Government offices and developmental organizations are located in New Delhi, so most of the messages originated from New Delhi. Mumbai, Lucknow, Chandigarh and Hyderabad were other top cities where public participation in nutrition discourse was higher. The top 5 influencers who engaged themselves in nutrition discourse during POSHAN Maah also include social media handles of Governmental institutions. Around 67.5% of participants used English, whereas 20.6% used Hindi for nutrition communication. Marathi, Telugu, Gujarati, Bengali, Malayalam and other languages were also used for nutrition information dissemination on social media during POSHAN Maah. When we look at the gender distribution of the participants who engaged in nutrition discourse on social media, 78% were male, whereas 22% were female. This finding may be attributed to the fact that women have less access to the internet and mobile phones than men. The age-wise distribution of participants revealed that all the women participants belong to the age group of 18 - 25 years of age. This means that social media provides an excellent opportunity to communicate nutrition-related messages to adolescents and young women in the reproductive age group (WRA). Most male participants engaged in nutrition discourse on social media platforms belonging to the age group of 25 - 55 years. This study showed that no participants were below the age of 18 years. It means engaging young adolescents in nutrition discourse, messaging, and communication is a challenge on social media.

The qualitative findings derived from interviews and focused group discussions (FGDs) in New Delhi unveiled a notable lack of awareness among women regarding the nutrition messages emphasized during the campaign. The primary source of nutrition and health information for most critical stakeholders in the community were the monthly meetings conducted by Anganwadi workers and Accredited Social Health Activists (ASHAs). The study discovered that most women did not utilize smartphones, remaining disconnected from digital communication channels. Although a few women watched television, they could not recall encountering any content related to nutrition education. While women and adolescent girls were aware of social media platforms, their engagement on these platforms was infrequent, and even when some adolescent girls did utilize these platforms, they were not exposed to nutrition-related information.

In contrast, innovative methods of nutrition communication, such as Godh Bharai (a traditional baby shower ceremony) and Anna Prashan (the first complementary feeding ceremony) were identified as effective means of disseminating nutrition-related messages. The research findings indicate that digital technology and social media were not perceived as sources of nutrition information and knowledge among the underprivileged community residing in the slums of Delhi. Instead, Auxiliary Nurse Midwives (ANMs), ASHAs, and Anganwadi workers emerged as the community's primary health and nutrition information sources, particularly for women. Pregnant women, lactating mothers, and adolescent girls preferred approaching frontline workers who maintained close engagement with the community, perceiving them as convenient and reliable sources of information.

Implications for research and practice

The study on nutrition-related messages shared on social media during the POSHAN Maah campaign provided some insights. It was discovered that people participated enthusiastically in sharing nutrition-related information on various social media platforms. Information was shared actively, with a high frequency of posts and shares. While the level of engagement was high, the quality of the shared information was questionable. The study highlights the need for context-rich nutrition messaging to provide a comprehensive understanding of nutrition information.

Moreover, the repetitive nature of shared information resulted in a monotonous feed that did not engage users effectively. This lack of diversity in messaging is an issue that needs to be addressed to ensure that nutrition messages reach a broader audience. Diverse messaging strategies can overcome this issue, including using multimedia formats and varying messaging tones to appeal to different age groups and demographic segments. Overall, the study emphasized the importance of context-rich nutrition messaging in social media campaigns to make them more effective.

To improve the effectiveness of nutrition messaging on social media during campaigns like POSHAN Maah, it is recommended that the Government and other stakeholders focus on enhancing the quality of information shared. This can be achieved by developing clear and concise messages that are easily understood by the target audience, using simple language and visual aids where appropriate.

Ensuring the information shared is relevant and contextual to the target audience is essential. This can be achieved through collaboration with nutrition experts and community leaders, who can provide valuable insights into the local context and help tailor messages accordingly.

Furthermore, investing in capacity building for creators and senders of information on social media platforms is essential. This includes training on appropriate communication skills, such as message framing and audience segmentation, to ensure the messages are engaging and effective.

Adopting a coordinated and integrated approach across all communication channels is recommended to maximize the impact of nutrition messaging on social media. This includes leveraging existing platforms and networks, such as community groups and influencers, to reach a wider audience and drive engagement.

The qualitative findings from the primary data underscore the necessity for increased investment in Interpersonal Communication (IPC) facilitated by frontline workers as a critical step toward achieving effective nutrition communication.

References

[1].   Andrien M, Beghin I (1994) Nutrition Education Or Managing Social Communication For Nutrition, Pub Med Accessed From: Https://Pubmed.Ncbi.Nlm.Nih.Gov/8186941/ , Accessed On: 2 September 2022

[2].   Aijaz A (2017) Preventing Hunger And Malnutrition In India, ORF Issue Brief, Observer Research Foundation Accessed From: Https://Www.Orfonline.Org/Wp-Content/Uploads/2017/06/ORF_Issuebrief_182_Hunger.Pdf , Accessed On: 1 September 2022

[3].   PIB (2021) PoshanAbhiyan: Prime Minister's Overarching Scheme For Holistic Nourishment, Press Information Bureau, Moib, Government Of India Accessed From:
Https://Static.Pib.Gov.In/Writereaddata/Specificdocs/Documents/2021/Dec/Doc202112111.Pdf , Accessed On: 05 September 2022

[4].   Jan Andolan Guidelines (2021) PoshanAbhiyan, Ministry Of Women And Child Development, Government Of India Accessed From: Http://Icds-Wcd.Nic.In/Nnm/NNM-Web-Contents/LEFT-MENU/Guidelines/Janandolanguidelines-English.Pdf , Accessed On: 01 September 2022

[5].   Chan, J. C. (2013). The Role OfSocial Media In Crisis Preparedness, Response And Recovery. OECDAccessed From: Https://Www.Oecd.Org/Governance/Risk/The%20role%20of%20Social%20media%20in%20crisis%20preparedness,%20response%20and%20recovery.Pdf , Accessed On: 21 August 2022

[6].   Dixon S (2023) Facebook: Quarterly Number Of MAU (Monthly Active Users) Worldwide 2008-22, Statista. Accessed From: Https://Www.Statista.Com/Statistics/264810/Number-Of-Monthly-Active-Facebook-Users-Worldwide/, Accessed On: 25 August 2022

[7].   SubbaraoM, Gavaravarapu, (2018) Nutrition Communication - Rhetoric & Reality, Indian Journal Of Medical Research, 149(3): 333–344. Doi: 10.4103/Ijmr.IJMR_1772_18
Accessed From: Https://Www.Ncbi.Nlm.Nih.Gov/Pmc/Articles/PMC6607813/Pdf/IJMR-149-333.Pdf , Accessed On: 21 August 2022

[8].   Berelson, B. (1952) Content Analysis In Communicative Research. New York: Free Press. Accessed From: Https://Psycnet.Apa.Org/Record/1953-07730-000 , Accessed On: 1 September 2022

[9].   Levin M (2023) What Is Social Listening: Definition, Benefits Top 5 Tools Guide, Digimind Accessed From: Https://Blog.Digimind.Com/En/Insight-Driven-Marketing/Social-Listening-Guide-2022 , Accessed On 30 August 2022