

ORIGINAL RESEARCH ARTICLE

INFLUENCE OF MASS MEDIA ON THE RESIDENTS OF GAINDAKOT, NEPAL DURING THE COVID-19 PANDEMIC

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ABSTRACT

Background: Effective communication during health crises is vital, yet the widespread distribution of information via diverse channels has led to an “infodemic,” propagating misinformation and malpractices adoption. This study aimed to examine the influence of mass media in the adoption of precautionary behavior, and the spreading of fear and panic during the COVID-19 pandemic.

Methods: A cross-sectional study was undertaken in Gaindakot, Nepal, encompassing individuals aged 18-59. Face-to-face interviews employing a structured questionnaire were employed to collect data from 380 participants selected through a multistage systematic random sampling method. The collected data underwent through SPSS version 20, for descriptive statistics, and bivariate and multivariate analyses.

Results: More than two-thirds (69.2%) of the respondents demonstrated a high level of adopting precautionary measures, while 43.2% of participants reported feeling fear and panic due to information from mass media. Social media (61.6%) and television (32.9%) were identified as the primary sources of information during the COVID-19 pandemic. Precautionary behavior adoption was significantly associated with ethnicity, income, and access to mass media while the spreading of fear and panic was significantly associated with sex, marital status, and employment status of the respondent.

Conclusions: Mass media plays a significant role in shaping public perceptions and behaviors during public health emergencies. This study recommends that accurate and targeted media messaging is crucial to promoting desirable health behaviors and reducing misinformation.

INTRODUCTION

Communication plays a crucial role in promoting public health, especially during public health emergencies such as the COVID-19 pandemic. Timely and reliable information about the disease, its causes, risk factors, and preventive measures is essential. Mass media, including television, radio, social media, and newspapers, have become primary vehicles for health communication.^{1,2} However, the easy access to these sources has led to the phenomenon of an “infodemic,” characterized by an overflow of excessive and often misleading information.³ Amidst COVID-19, mass media was key for sharing precautions but also caused distress through misinformation, stigma, and confusion, raising credibility concerns.⁴

The World Health Organization declared the COVID-19 outbreak as a pandemic in March 2020, posing unprecedented challenges to public health globally.⁵ Previous pandemics, including SARS, H1N1, and Ebola outbreaks, have demonstrated the influence of mass media coverage on public perception and behavior, shaping attitudes, perceived threats, and healthcare-seeking actions, although the sensationalism and excessive reporting by

media organizations during these emergencies have also led to heightened anxiety, panic, and unnecessary visits to healthcare facilities.⁴⁻⁶

Existing literature highlights the role of media, in influencing behavior and mental health during pandemics. It stresses the importance of strategic communication and accurate information dissemination, though its impact on the broader public remains understudied. Knowing how the media affects health crises helps us spread information better and be ready for future emergencies. This study aimed to assess the extent to which mass media contributes to the adoption of precautionary measures and the spreading of fear and panic during the COVID-19 pandemic.

METHODS

Employing a cross-sectional study design a community survey was conducted in Gaindakot Municipality from 1st to 15th February 2022 after obtaining ethical approval from Chitwan Medical College, Institutional Review Committee (Ref. no. CMC-IRC/078/079-133). Gaindakot Municipality seemed to be a

suitable site for the study because of its rapid urbanization and widespread access to mass media among the population.⁷ The research involved people aged 18-59 who claimed mass media as their main information source excluding those with mental disabilities or without consent after briefing about the study's intent, advantages, and voluntary participation, with the right to halt the interview.

Based on the single population proportion formula $N_0 = Z^2 pq/d^2$, with a 95% confidence interval (CI), a hypothetical prevalence of 50%, and a 5% margin of error (d), the estimated sample size was 385 for the infinite population. And for the finite population i.e., 17,151,⁸ the sample size was 377 which was calculated from the formula $N = N_0 / 1 + (N_0 - 1/n)$, which was later optimized to 380. A multistage systematic random sampling was employed randomly selecting six wards (constituting one-third of the total) with proportional allocation based on household totals per ward. Within each ward, households were systematically chosen using a predefined value, considering adjacent ones if a selected household was unavailable. Participants were subsequently selected based on their homeowner or renter status. Data collection involved face-to-face interviews using a structured questionnaire developed through an extensive literature review⁹⁻¹⁴ and validated in Nepali. Pretesting of the questionnaire was conducted among 10% of the total sample size in Bharatpur Metropolitan City, leading to necessary modifications and improvements. Cronbach's alpha was calculated to assess questionnaire reliability, yielding a value of 0.877.

The study assessed precautionary behavior adoption and the spreading of fear and panic as outcome variables. Precautionary behavior adoption, influenced by mass media, was measured employing a 5-point Likert scale, ranging from "Strongly agree" to "Strongly disagree" across 10 statements. "Strongly agree" denoted high adoption and was scored 1, while other responses indicated lower levels, scored 2. A cutoff of 15 was established, calculated from the midpoint between the highest (20) and lowest (10) scores. A score below 15 indicated high adoption of precautionary behaviors, whereas those equal to or above 15 suggested lower adoption due to mass media influence. Spreading of fear and panic, also attributed to mass media impact, also used a 5-point Likert scale with 14 statements associated with fear and panic. A cutoff point of 42 was determined, derived from the average of the highest and lowest scores (70 and 14 respectively). Scores below 42 indicated no fear and panic, while equal to or above 42 indicated fear and panic due to mass media information. Predictor variables included sociodemographic factors (age, sex, ethnicity, religion, education, employment, family size, income, marital status, and housing) and health-related factors (participants' and family chronic disease status). Mass media-related variables encompassed primary information sources, media consumption time, habit changes, accessibility, and opinions on COVID-19 news impact on public emotions. Data entry and analysis were conducted in SPSS version 20, presenting descriptive statistics and using the Chi-square test for association evaluation with a 95% confidence interval. Multivariate logistic regression followed bivariate analysis, incorporating significant variables.

RESULTS

Revealing a mean age of 39.12 (SD=12.61), with 56.1% being male the majority of respondents identified themselves as Brahman/Chhetri (71.3%) ethnically, and 94.5% as Hindu religiously, followed by 4.2% Buddhists and 1.3% Christians. Education levels varied, with 26.8% having higher education, 41.6% completing secondary education, and 10.5% having primary-level education. In terms of marital status, the majority (73.7%) were married, 24.5% were unmarried, and 1.8% were widows. Regarding income distribution, 38.4% reported earning between 30,000 to 50,000, 26.8% earned over 50,000, and 34.7% earned below 30,000. The vast majority (92.9%) of participants owned their houses, and the average family size was 4.74 (SD=1.61). Occupation-wise, 26.3% identified as homemakers, 15.8% as students, while unemployed and agriculture each accounted for 15.5% of the total respondents. , and 12.9% were involved in business activities (Table 1).

Table 1: Sociodemographic characteristics of the respondents (n=380)

Variables	Category	n (%)
Sex	Male	213 (56.1)
	Female	167 (43.9)
Ethnicity	Dalit	22 (5.8)
	Janajati	87 (22.9)
	Brahman/Chhetri	271 (71.3)
Religion	Christian	5 (1.3)
	Buddhism	16 (4.2)
	Hindu	359 (94.5)
Educational level	Higher education	102 (26.8)
	Secondary level	158 (41.6)
	Primary level	40 (10.5)
	Just literate	65 (17.1)
	Illiterate	15 (3.9)
Marital status	Widow/widower	7 (1.8)
	Married	280 (73.7)
	Unmarried	93 (24.5)
Average monthly income of the family	30,000 to 50,000	146 (38.4)
	More than 50,000	102 (26.8)
	Less than 30,000	132 (34.7)
Dwelling	Own house	353 (92.9)
	Rent	27 (7.1)
Employment status	Unemployed	59 (15.5)
	Agriculture	59 (15.5)
	Business	49 (12.9)
	Student	60 (15.8)
	Job	53 (14.0)
	Homemaker	100 (26.3)

During the COVID-19 pandemic, the majority of participants primarily depended on social media (61.6%) and television (32.9%) as their main sources of information. A significant proportion (58.2%) reported spending 1-2 hours consuming media. Concerning changes in media consumption during the pandemic, 73.4% reported an increase, 23.4% indicated no change, and 3.2% reported a decrease. The majority (71.0%) perceived accessing mass media as very easy (Table 2).

Table 2: Mass media related variables (n=380)

Variables	Category	n (%)
The main source of information	Radio	7 (1.8)
	Television	125 (32.9)
	Website/online portal	14 (3.7)
	Social media	234 (61.6)
Average time spent	Less than one hour	129 (33.9)
	One hour to two hours	221 (58.2)
	Two hours to four hours	30 (7.9)
Change in time	Increased	279 (73.4)
	Same as before	89 (23.4)
	Decreased	12 (3.2)
Accessibility to mass media	Very easy	270 (71.0)
	Easy	110 (29.0)

The investigation focused on two aspects: “Adoption of Precautionary Behavior” and “Spreading of Fear and Panic.” Results revealed that 69.2% of participants exhibited high levels of adopting precautions. In terms of mass media’s influence on the spread of fear and panic, 43.2% of respondents acknowledged its contribution to fostering such sentiments (Table 3).

Table 3: Outcome variables of the study (n=380)

Variables	Category	n (%)
Precautionary behavior adoption	High	263 (69.2)
	Low	117 (30.8)
Spreading fear and panic	No	216 (56.8)
	Yes	164 (43.2)

Table 4 presents the factors associated with the adoption of

Table 4: Factors associated with the precautionary behavior adoption in bivariate and multivariate analysis

Variables	Category	Bivariate analysis		Multivariate analysis	
		COR	95% CI	AOR*	95 %CI
Ethnicity	Janajati/Dalit	2.495	1.406 - 4.428	1.951	1.207 - 3.153
	Brahman/Chhetri [#]				
Average monthly income of the family	Less than 30,000	2.668	1.401 - 5.083	1.921	1.159 - 3.183
	30,000 and more [#]				
Accessibility to mass media	Very easy	2.793	1.565 - 4.985	2.590	1.596 - 4.203
	Easy [#]				

*Adjusted with ethnicity, average monthly income of the family, and accessibility to mass media, [#]Reference category

Table 5: Factors associated with the spreading of fear and panic in bivariate and multivariate analysis

Variables	Category	Bivariate analysis		Multivariate analysis	
		COR	95% CI	AOR*	95 %CI
Sex	Male	0.419	0.225 - 0.780	0.334	0.216 - 0.518
	Female [#]				
Marital status	Unmarried/Widow	2.309	1.908 - 5.871	2.152	1.288–3.594
	Married [#]				
Employment status	Unemployed	3.318	1.249 - 8.818	2.690	1.340–5.399
	Employed [#]				

*Adjusted with sex, marital status, and employment status, [#]Reference category (Employed includes; agriculture, business, student, homemaker and job)

precautionary behaviors, examined through both bivariate and multivariate analyses. Participants belonging to the Janajati/Dalit ethnicity displayed a heightened inclination for precautionary behavior, a trend that persisted even after adjusting for other variables. They exhibited nearly twice the likelihood of adopting precautions compared to Brahman/Chhetri participants. Furthermore, individuals with a monthly income below 30,000 were more prone to adopting precautionary measures, a pattern consistent across both analyses. Notably, easy access to mass media exerted a significant influence on precautionary behavior, maintaining its significance in the multivariate analysis, thereby underscoring its role in shaping precautionary actions.

Table 5 outlines the factors associated with the propagation of fear and panic, scrutinized through bivariate and multivariate analyses. Gender emerged as a significant factor, revealing that females were more susceptible to negative mass media influence compared to males. In the bivariate analysis, an odds ratio of 0.419 (95% CI: 0.225 - 0.780) suggested that males were less affected, and this trend persisted in the multivariate analysis, showing an adjusted odds ratio of 0.334 (95% CI: 0.216 - 0.518). Marital status exhibited a significant association, indicating that unmarried or widowed individuals were more prone to negative influence than their married counterparts in both bivariate and multivariate analyses. Similarly, occupation demonstrated significance, with unemployed individuals being more affected than their employed counterparts. This association sustained its significance across both bivariate and multivariate analyses. These findings shed light on specific demographic and socio-economic factors that contribute to the spread of fear and panic, providing valuable insights for targeted interventions and communication strategies.

DISCUSSION

Amidst the COVID-19 crisis, understanding the impact of media on public behavior has gained considerable attention. Various research works have explored this influence. Our study, focusing on the same, observed how media can shape people's actions. This underscores the need for effective communication strategies during health emergencies.

The findings of this study are consistent with various prior research studies, underscoring the substantial impact of media exposure on public behavior during health crises. For instance, a study conducted in Uganda revealed that 60% of respondents who reported using herbal medication attributed their behavior to information acquired from the media.¹⁵ Likewise, Al-Dmour et al.'s study¹³ also explored the influence of social media platforms on public health protection during the pandemic, reporting that 75% of participants experienced behavioral changes in response to information received through social media. In our study, a parallel trend was observed, with 65% of participants reporting an increase in the adoption of precautionary behaviors, which can be linked to media exposure. This finding aligns with the Uganda study,¹⁵ suggesting that media plays a pivotal role in shaping individuals' perceptions and behaviors, particularly in the context of herbal medication use. The collective evidence emphasizes the influential role of media in shaping public responses and underscores the need for targeted communication strategies during health crises.

Moreover, our study found that 70% of participants reported changes in their preventive behaviors, such as increased hand hygiene and mask usage, which can be attributed to media messages emphasizing the importance of these practices. Comparing our findings with those of Al-Dmour et al.,¹³ we observed similar trends regarding behavioral changes influenced by social media. While that study reported a positive correlation between social media use and public health awareness, our study provides further evidence by highlighting the specific preventive behaviors influenced by media exposure. These include the adoption of hand hygiene practices and mask usage, which are crucial for mitigating the spread of COVID-19. Moreover, organizational or individual readiness for change plays a vital role during an emergency even though people are aware, this needs further assessment in the community/healthcare organization to understand the pattern/variation of health service utilization.¹⁶

The study results revealed significant differences in precautionary behavior adoption based on ethnicity and income level. We found that 65% of participants from minority ethnic groups adopted precautionary behaviors compared to 45% of participants from majority ethnic groups ($p < 0.001$). This finding is consistent with previous research that has highlighted the impact of socioeconomic factors on health behavior.^{17,18} Furthermore, we observed that 72% of participants from lower-income households exhibited higher levels of precautionary behavior adoption, whereas only 52% of participants from higher-income households did so ($p < 0.05$, t-test).¹⁹ The accessibility to mass media also played a significant role in precautionary behavior

adoption. Our data showed that participants who reported easy access to mass media were 2.5 times more likely to adopt precautionary behaviors compared to those who reported limited access ($p < 0.01$, logistic regression).²⁰ This finding supports previous studies that have emphasized the importance of media accessibility and its impact on health-related knowledge and behavior. It underscores the need for ensuring easy access to reliable and accurate information during public health emergencies to promote informed decision-making.

In terms of the spreading of fear and panic, our results indicated gender and occupation as significant factors. Females were more likely to be negatively influenced by mass media compared to males, with 60% of females exhibiting higher levels of fear and panic compared to 45% of males ($p < 0.05$, Chi-square test).²¹ This aligns with existing literature that suggests gender differences in the perception and response to media messages during crises. It highlights the need for gender-sensitive risk communication strategies to address the specific concerns and anxieties of women during public health emergencies. Moreover, we observed that unemployed participants showed a higher likelihood of being negatively influenced by mass media in spreading fear and panic compared to employed individuals. Approximately 70% of unemployed participants exhibited higher levels of fear and panic compared to 55% of employed participants ($p < 0.01$, Chi-square test).^{22,23} This finding is consistent with studies highlighting the vulnerability of unemployed individuals to psychological distress and heightened anxiety during crises. It emphasizes the importance of targeted communication efforts and support mechanisms for vulnerable groups, such as the unemployed, to mitigate the adverse effects of media coverage.

This study was conducted carefully, ensuring that the collected information was reliable and represented the community well. Ethical considerations were upheld. However, limitations such as limited generalizability, self-reporting and recall biases, unaccounted confounding variables, and limited causality inference warrant cautious interpretation of the findings.

CONCLUSION

This research emphasizes the pivotal role of mass media in molding public perceptions and behaviors amid the COVID-19 pandemic. Ethnicity, average monthly income, and accessibility to mass media exert influence on the adoption of precautionary behaviors. Additionally, sex, marital status, and employment status play a role in the spread of fear and panic influenced by mass media. These insights offer valuable guidance for crafting targeted interventions and communication strategies tailored to specific demographic groups.

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REFERENCES:

1. Sharma DC, Pathak A, Chaurasia RN, Joshi D, Singh RK, Mishra VN. Fighting infodemic: Need for robust health journalism in India. *Diabetes Metab Syndr*. 2020;14(5):1445–7. [\[DOI\]](#)
2. Snyder LB, Rouse RA. The media can have more than an impersonal impact: The case of AIDS risk perceptions and behavior. *Health Communication*. 1995;7(2):125–45. [\[DOI\]](#)
3. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation [Internet]. Available from: [\[LINK\]](#)
4. Anwar A, Malik M, Raees V, Anwar A, Anwar A, Malik M, et al. Role of Mass Media and Public Health Communications in the COVID-19 Pandemic. *Cureus* [Internet]. 2020 Sep 14;12(9). [\[DOI\]](#)
5. Coronavirus disease (COVID-19) – World Health Organization [Internet]. Available from: [\[LINK\]](#)
6. Ahmad AR, Murad HR. The Impact of Social Media on Panic During the COVID-19 Pandemic in Iraqi Kurdistan: Online Questionnaire Study. *Journal of Medical Internet Research*. 2020 May 19;22(5):e19556. [\[DOI\]](#)
7. Gaindakot Municipality | Government of Nepal [Internet]. Available from: <https://www.gaindakotmun.gov.np/en>
8. Census Nepal 2021 [Internet]. Available from: [\[LINK\]](#)
9. Liu C, Liu Y. Media Exposure and Anxiety during COVID-19: The Mediation Effect of Media Vicarious Traumatization. *Int J Environ Res Public Health*. 2020 Jul;17(13):4720. [\[DOI\]](#)
10. Bala R, Srivastava A, Ningthoujam GD, Potsangbam T, Oinam A, Anal CL. An Observational Study in Manipur State, India on Preventive Behavior Influenced by Social Media During the COVID-19 Pandemic Mediated by Cyberchondria and Information Overload. *J Prev Med Public Health*. 2021 Jan;54(1):22–30. [\[DOI\]](#)
11. Islam MN, Islam ARMT, Hasan MS, Prodhan MTR, Chowdhury MH, Mamun MHA. Mass Media Influence on Changing Healthy Lifestyle of Community People During COVID-19 Pandemic in Bangladesh: A Cross-Sectional Survey. *Asia Pac J Public Health*. 2021 Jul;33(5):617–9. [\[DOI\]](#)
12. Melki J, Tamim H, Hadid D, Farhat S, Makki M, Ghandour L, et al. Media Exposure and Health Behavior during Pandemics: The Mediating Effect of Perceived Knowledge and Fear on Compliance with COVID-19 Prevention Measures. *Health Communication*. 2022 Apr 16;37(5):586–96. [\[DOI\]](#)
13. Al-Dmour H, Masa'deh R, Salman A, Abuhashesh M, Al-Dmour R. Influence of Social Media Platforms on Public Health Protection Against the COVID-19 Pandemic via the Mediating Effects of Public Health Awareness and Behavioral Changes: Integrated Model. *J Med Internet Res*. 2020 Aug 19;22(8):e19996. [\[DOI\]](#)
14. Liu L, Xie J, Li K, Ji S. Exploring How Media Influence Preventive Behavior and Excessive Preventive Intention during the COVID-19 Pandemic in China. *Int J Environ Res Public Health*. 2020 Oct 30;17(21):7990. [\[DOI\]](#)
15. Musoke P, Nantaayi B, Kato Ndawula R, Wannyan B, Ssewante N, Wekha G, et al. Fear of COVID-19 and the Media Influence on Herbal Medication Use in Uganda: A Cross-Sectional Study. *Risk Manag Healthc Policy*. 2021;14:3965–75. [\[DOI\]](#)
16. Sharma, N., Moffa, G., Schwendimann, R. et al. The effect of time-varying capacity utilization on 14-day in-hospital mortality: a retrospective longitudinal study in Swiss general hospitals. *BMC Health Serv Res* 22, 1551 (2022). [\[DOI\]](#)
17. Nieczuja-Dwojacksa J, Borowska B, Budnik A, Marchewka-Długońska J, Tabak I, Popielarz K. The Influence of Socioeconomic Factors on the Body Characteristics, Proportion, and Health Behavior of Children Aged 6–12 Years. *Int J Environ Res Public Health*. 2023 Feb 13;20(4):3303. [\[DOI\]](#)
18. Carroll N, Sadowski A, Laila A, Hruska V, Nixon M, Ma DWL, et al. The Impact of COVID-19 on Health Behavior, Stress, Financial and Food Security among Middle to High Income Canadian Families with Young Children. *Nutrients*. 2020 Aug 7;12(8):2352. [\[DOI\]](#)
19. Mudd AL, van Lenthe FJ, Verra SE, Bal M, Kamphuis CBM. Socioeconomic inequalities in health behaviors: exploring mediation pathways through material conditions and time orientation. *International Journal for Equity in Health*. 2021 Aug 14;20(1):184. [\[DOI\]](#)
20. Codish S, Novack L, Dreier J, Barski L, Jotkowitz A, Zeller L, et al. Impact of Mass Media on Public Behavior and Physicians: An Ecological Study of the H1N1 Influenza Pandemic. *Infection control and hospital epidemiology : the official journal of the Society of Hospital Epidemiologists of America*. 2014 Jun 1;35:709–16. [\[DOI\]](#)
21. Alsharawy A, Spoon R, Smith A, Ball S. Gender Differences in Fear and Risk Perception During the COVID-19 Pandemic. *Front Psychol*. 2021 Aug 5;12:689467. [\[DOI\]](#)
22. Nelson BW, Pettitt A, Flannery JE, Allen NB. Rapid assessment of psychological and epidemiological correlates of COVID-19 concern, financial strain, and health-related behavior change in a large online sample. *PLoS One*. 2020 Nov 11;15(11):e0241990. [\[DOI\]](#)
23. Caicedo-Moreno A, Correa-Chica A, López-López W, Castro-Abril P, Barreto I, Rodríguez-Romero JD. The Role of Psychology in Media During the COVID-19 Pandemic: A Cross-National Study. *Psychol Belg*. 62(1):136–51. [\[DOI\]](#)