UNRAVELING THE SPREAD OF FALSE INFORMATION AMONG INDIAN COLLEGE STUDENTS DURING COVID-19: AN ANALYTICAL APPROACH

Rakesh Kumar Pandey and Sabina Raj Priyadarshi

ABSTRACT:

In recent years, social media has become an increasingly popular tool for sharing information, particularly among college students in India. However, this rise has also led to an increase in the spread of misinformation. This study explores the motivations behind why college students share false information online. Using a survey conducted via Google Forms, data was collected on demographics, motivations, and the characteristics of information shared. A Misinformation Sharing Index (MSI) was developed to analyse patterns. The study found that 62.4% of students admitted their friend's shared misinformation, primarily driven by factors like self-expression, socializing, and information characteristics. Students who accessed social media more than 12 times daily were most likely to share misinformation. Interestingly, verifying the accuracy of information was not a top priority for many. Gender differences were also observed, with male students sharing more misinformation than females, although female respondents believed their peers shared more. An educational gap emerged, showing that undergraduate students, especially males, shared more misinformation than their counterparts. The COVID-19 pandemic amplified the spread of false information, leading to unnecessary lifestyle changes and negatively affecting mental health. The research highlights that misinformation sharing has grown significantly during the pandemic, resulting in harmful practices and behavioural changes. This study offers unique insights into the underlying reasons for misinformation sharing among college students and sheds light on the need for greater awareness regarding information verification on social media platforms.

Index Terms: *COVID-19; Misinformation; social media; College students; Mental health.*

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1. INTRODUCTION

Social media has reshaped how people interact and access information, making it easier to share data quickly and connect globally. Among college students in India, social media has become a dominant platform for communication, but this rise in interaction has also led to a surge in the spread of misinformation, particularly during the COVID-19 pandemic. Misinformation, defined as false or misleading information shared regardless of intent, can have severe consequences when it comes to public understanding, behaviour, and mental health, especially during crises like pandemics.

During the COVID-19 pandemic, misinformation became rampant, with false information regarding the virus's origins, potential cures, and safety measures spreading widely across social media platforms. This often led to confusion, fear, and mistrust among the public. The term "infodemic" was coined to describe the overwhelming flood of misinformation on social media during this time, likened to a virus spreading uncontrollably. This spread of misinformation was exacerbated by the sheer volume of information that circulates on platforms such as Facebook, Twitter, and Instagram, making it difficult for users to discern truth from falsehood.

College students in India represent a particularly important demographic in the study of misinformation. As active users of social media, they frequently engage in information sharing, making them central figures in the spread of both accurate and inaccurate data. This study aims to understand the motivations behind why students share misinformation, the factors influencing this behaviour, and the mental health impact of such actions, particularly during the pandemic.

Social media's design plays a critical role in amplifying the spread of misinformation. Platforms are designed to facilitate fast communication through instant messaging, photo sharing, and algorithm-driven recommendations that prioritize engaging content. However, this ease of sharing can come at the expense of accuracy, as people may share information without verifying its validity. This issue is compounded by the emotional nature of certain content, which may drive individuals to share based on feelings of shock or fear rather than fact.

The COVID-19 pandemic provided fertile ground for the rapid dissemination of misinformation. The uncertainty surrounding the virus led many people to seek answers online, where they were often met with false or misleading information. Studies show that exposure to this misinformation led to heightened levels of anxiety and depression, especially among social media users. In some cases, this abundance of unverified information led to a condition known as Cyberchondria, where individuals experience anxiety after excessively searching for health-related information online. For many, this only added to the psychological strain of the pandemic.

Several factors influence misinformation-sharing behaviour among college students in India, including gender, education level, and social media habits. Research indicates that male students are more likely to share unverified information than their female counterparts. Similarly, students who spend more time on social media or log in frequently throughout the day are more likely to spread misinformation. These behaviours often stem from emotional reactions to content, rather than a deliberate intention to mislead. Moreover, students may share information they find believable or relevant, without verifying the source.

The relationship between misinformation and mental health is another critical area of concern. During the pandemic, the spread of false information led to significant changes in behaviour and increased emotional distress. Many students experienced heightened levels of anxiety, frustration, and loneliness as they navigated the uncertainty of the pandemic and were bombarded by conflicting information online. Indian students reported increases in negative emotions such as fear and boredom, as lockdowns and restrictions disrupted their daily lives.

It is important to note that the sharing of misinformation is not always done with malicious intent. Many individuals are simply unaware that the information they are passing along is false. This lack of awareness, combined with the fast-paced nature of social media, has made misinformation a common, everyday occurrence. People tend to share information that is emotionally charged, shocking, or believable, without necessarily checking its accuracy. This is especially true in times of crisis, when people are more eager for updates and solutions and may not take the time to verify the information they come across.

The motivations behind misinformation sharing among college students in India are diverse. Some students may share information to express their thoughts and feelings, while others may do so to engage in social interactions or because they find the content emotionally resonant. Understanding these motivations is key to addressing the broader issue of misinformation on social media and reducing its spread.

This study collected data from students in the Indian states of Rajasthan and Maharashtra through a survey that asked about their demographics, perceptions of misinformation, and the types of information they shared on social media. The data was analysed to create a Misinformation Sharing Index (MSI), which measures the extent of misinformation sharing among participants. Statistical analysis using R software was employed to identify patterns in misinformation-sharing behaviour and its impact on mental health.

The findings of this research provide important insights into the behaviour of college students when it comes to sharing misinformation. These insights can be used to inform strategies for reducing the spread of false information and improving information literacy among students. For instance, educational campaigns that emphasize the importance of verifying sources and fact-checking before sharing information could help curb the spread of misinformation. Additionally, mental health support for students affected by the overwhelming flow of misinformation could help alleviate some of the psychological strain caused by the pandemic.

Social media plays a significant role in the spread of misinformation, particularly during times of crisis like the COVID-19 pandemic. College students, as frequent users of social media, are key players in this phenomenon. Their motivations for sharing misinformation vary, from self-expression to socializing and reacting to emotionally charged content. By understanding the factors that drive misinformation sharing, we can develop better strategies to reduce its spread and mitigate its harmful effects on public health and mental well-being. Through improved information literacy and awareness, it may be possible to create a more responsible and informed social media environment, especially in times of global crisis.

2. METHODOLOGY

2.1 Data

The study's data collection was conducted through an online questionnaire designed to analyse the motivations and perceptions of misinformation sharing among college students. The survey, created using Google Forms, was distributed via email and WhatsApp, encouraging students to share it further for a broader reach. The questionnaire began with an explanation of misinformation and scenarios to provide clarity to the participants. Respondents gave informed consent before answering questions, which were divided into five categories: perception, motivations, information characteristics, possible consequences, and post-pandemic effects.

The questionnaire gathered socio-demographic data, such as age, gender, educational status, economic background, time spent on social media and studies, and social media usage frequency. These variables helped to analyse differences in the motivations and behaviours of participants regarding misinformation sharing.

Each category in the survey consisted of questions rated on Likert scales, with some using multiple-choice formats. The perception section had six questions, five using a 5-point Likert scale, while the motivation section featured sixteen questions rated on both 4-point and 5-point scales. The information characteristics section included ten 5-point Likert scale questions. The possible consequences category had six questions, a mix of multiple-choice and Likert-scale ratings. Finally, the post-pandemic section consisted of two questions, one multiple-choice and one Likert-scale.

The survey was open to participants with internet access and a working knowledge of English. Data collection ran from October 30, 2020, to November 10, 2020. Out of 360 responses, 359 valid entries were included in the analysis. This comprehensive approach to data collection allowed for an in-depth understanding of the patterns and reasons behind misinformation sharing among college students, focusing on how socio-demographic factors affect these behaviours.

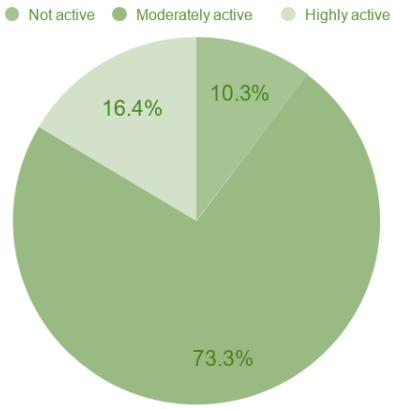

Fig. 1. Answers to the query: Do you use social media regularly?

The survey in the study was divided into several categories. The perception category had six questions, five on a 5-point Likert scale and one multiple-choice. The motivation section included sixteen questions rated on 4- or 5-point Likert scales. Information characteristics were evaluated with ten questions, all using a 5-point Likert scale. The possible consequences section had six questions, three rated on a 5-point scale and three multiple-choice. Lastly, the post-pandemic category featured two questions, one multiple-choice and one rated on a 5-point scale.

2.2. Statistical analysis

For data analysis, both descriptive statistics and inferential testing were utilized. Key metrics like frequency, mean, standard deviation, and percentage helped summarize the study's results. Descriptive analysis was applied across all questions to identify independent trends, while independent sample t-tests were used to compare differences between genders (male vs. female) and educational levels (undergraduate vs. graduate). Additionally, t-tests and chi-square tests estimated p-values, highlighting significant differences in results.

To explore the motivations behind sharing misinformation, advanced analytical techniques such as Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA) were employed. PCA helped identify principal components based on variance, revealing that PCA1 contributed 46.40% and

PCA2 contributed 12.33% to the overall variance. However, all questions were found to contribute almost equally, complicating the grouping process.

LDA, a supervised technique, identified key variables while considering the dependent variable. Given the multiple potential dependent variables present in the data, isolating independent variables based on a single dependent variable was challenging.

Correlation analysis was also conducted to assess linear relationships between variables. This method quantified the extent to which responses to various questions were similar. A correlation matrix was generated to analyze associations among the sixteen motivational questions, highlighting pairs with the highest correlation coefficients. This comprehensive approach offered insights into the motivations for sharing misinformation among college students, enhancing the understanding of their behavior in the context of social media.

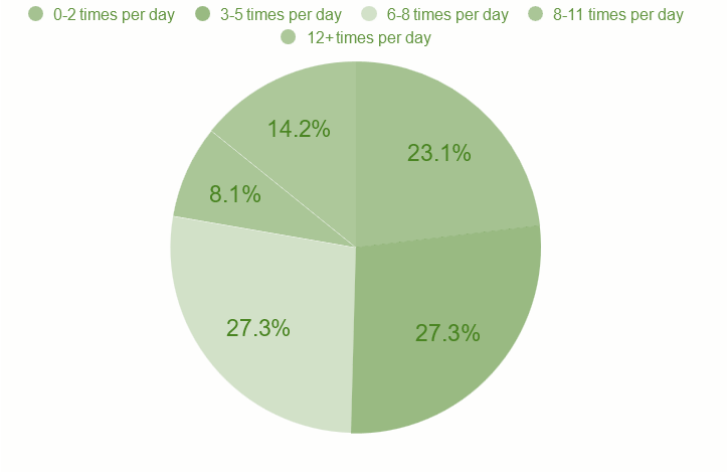

Fig. 2. Answers answer the query: How often do you use social media?

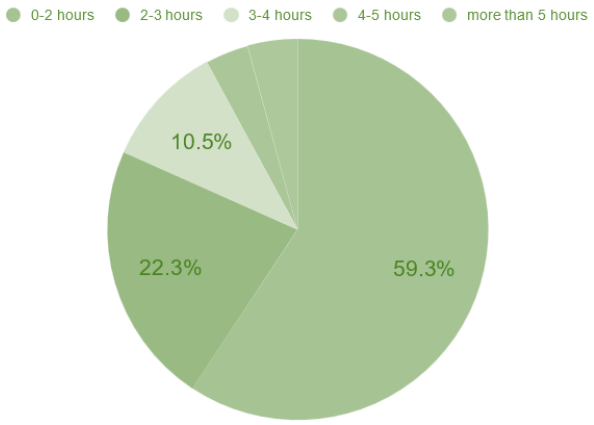

Fig. 3. Answers to the query: How much time do you spend on social media each day? (3.7% for hours 4-5 and 4.2% for hours over 5)

3. FINDINGS

The analysis included data from 359 respondents, with a notable 79.4% identifying as male and 20.6% as female. Most participants were aged between 18 and 22, averaging 21 years. Among them, 74.4% were undergraduates and 25.6% were graduates. All were social media users, with 73.3% being moderately active and 16.4% highly active. Additionally, 67.4% reported that their parents used social media. Most respondents spent less than two hours daily on these platforms, averaging 2.38 hours. Economically, 53.8% identified as lower-middle class, while 39.8% were upper-middle class. In terms of residence, 64.1% lived in urban areas compared to 35.9% in rural regions.

3.1. Perceptions on misinformation sharing

The survey results indicated that a significant portion of respondents, 62.4% (n=224), acknowledged that their friends sometimes share misinformation on social media. This was quantified with a mean score of 1.87 (SD = 0.82) on a 4-point scale, where 1 means "nobody" and 4 signifies "everybody." Interestingly, only 19.5% admitted to having shared misinformation themselves, while a vast majority (80.5%, n=289) claimed they never share misinformation.

Table 1. Students' perceptions on misinformation being shared.

Question	Average	SD	Options	Frequency	Percentage
1. How many of your friends share misinformation on social media?	1.87	0.82	1: No one	135	37.60%
			2: Very few people	150	41.80%
			3: Many people	60	16.70%
			4: Everyone	14	3.90%
2. How much misinformation is shared on social media by you?	1.26	0.59	1: Never share	289	80.50%
			2: Sometimes share	52	14.48%
			3: Regularly share	13	3.62%
			4: Always share	5	1.39%
3. How much misinformation will be shared on social media by you in the future?	1.32	0.64	1: Surely will not share	272	75.77%
			2: Maybe will not share	62	17.27%
			3: Maybe will share	20	5.57%
			4: Surely will share	5	1.40%

*SD = Standard deviation

Despite this, many respondents seemed unaware of their own misinformation-sharing habits, often attributing the behaviour to their peers. The frequency of sharing misinformation averaged at 1.26 (SD = 0.59), indicating that most respondents believed they seldom share misinformation. When asked about their intentions regarding future misinformation sharing, the average score was 1.32 (SD = 0.64), where 1 meant "surely will not share" and 4 meant "surely will share." Notably, 75.8% (n=272) expressed a firm intention to avoid sharing misinformation in the future.

These results highlight a disconnect between self-perception and the awareness of misinformation sharing behaviours among peers, suggesting a need for greater education on this issue. The analysis of socio-demographic differences in these responses will further illuminate how various factors influence attitudes toward misinformation.

3.2.1. Gender differences

The analysis of the survey data unveils notable gender differences in college students' perceptions of misinformation sharing. Female respondents scored higher on two of the three questions related to this topic, while both genders exhibited similar scores on one question (refer to Figure 4). The differences reached statistical significance in two areas: the perceived extent of friends sharing misinformation (M_{Male} = 1.88, SD = 0.844; M_{Female} = 1.84, SD = 0.845) and the expected future sharing of misinformation (M_{Male} = 1.45, SD = 0.59; M_{Female} = 1.23, SD = 0.60).

While perceptions of misinformation are largely aligned, the reasons for sharing it vary significantly between genders. Table A.6 in the appendix indicates that the foremost reason for both males and females is "Information sharing helps me get other people's views regarding the information or event." However, males identify "The information seems useful to me or others" as their second reason, while females prioritize "Sharing helps me express my opinions" and "The information seems useful to me or others," both with an equal Mean score of 2.47.

In-depth analysis using t-tests across the survey questions uncovered significant gender disparities, particularly among the 26 examined questions. Of these, nine exhibited substantial differences, with male respondents generally more inclined to answer "strongly agree" than female respondents. The question reflecting the greatest difference was "Sharing information is a good way to relieve boredom," with a p-value below 0.001. Other significant questions included "The information you are sharing is about a very sensitive topic" and "I want to look knowledgeable to others by sharing."

These nine questions include a blend of information characteristics and motivational factors, with four pertaining to the former and five to the latter. In the motivational category, three questions are linked to self-impression, and two relate to recreation. This suggests that, while both genders acknowledge the importance of information sharing, their underlying motivations diverge significantly based on individual perceptions and societal influences. This differentiation points to the complexity of motivations behind sharing misinformation, underscoring that individual factors play a critical role in shaping behaviours related to information dissemination in social media contexts.

3.2.2. Education level differences

The findings from the survey indicate that graduate students scored higher than undergraduate students on all three questions related to misinformation sharing, as illustrated in Figure 5. However, a statistically significant difference was found only in one question: the perceived extent of friends sharing misinformation. Graduate students reported a mean score of 2.09 (SD = 1.042), compared to undergraduates who scored 1.79 (SD = 1.043). This suggests that graduate students perceive a higher frequency of misinformation sharing among their peers, even though they constitute only 25.6% of the total respondents.

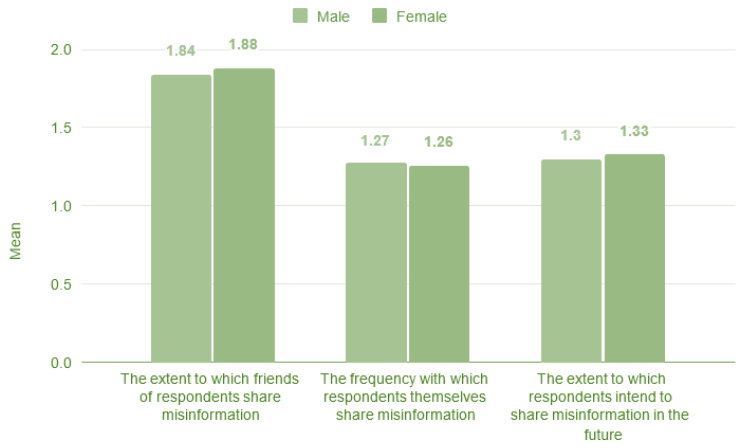

Fig. 4. Gender differences. Note: The range of responses is as follows: friends' degree of disinformation spreading ranges from 1 (“nobody”) to 4 (“everyone”). The volume of false information respondents divulged: From 1 ("never shared") to 4 ("always share"). Future sharing intentions range from 1 ("surely will not share") to 4 ("surely will share").

When analysing the motivations for sharing misinformation, both groups identified similar themes, consisting of four individual-oriented motivations and one related to information characteristics. Graduate students ranked "The information seems useful to me or others" as their top reason for sharing, whereas undergraduate students prioritized "Information sharing helps me to get other people's views regarding the information or event." This distinction highlights the more significant influence of individual motivations on the decision to disseminate misinformation, with graduate students emphasizing the utility of the information shared.

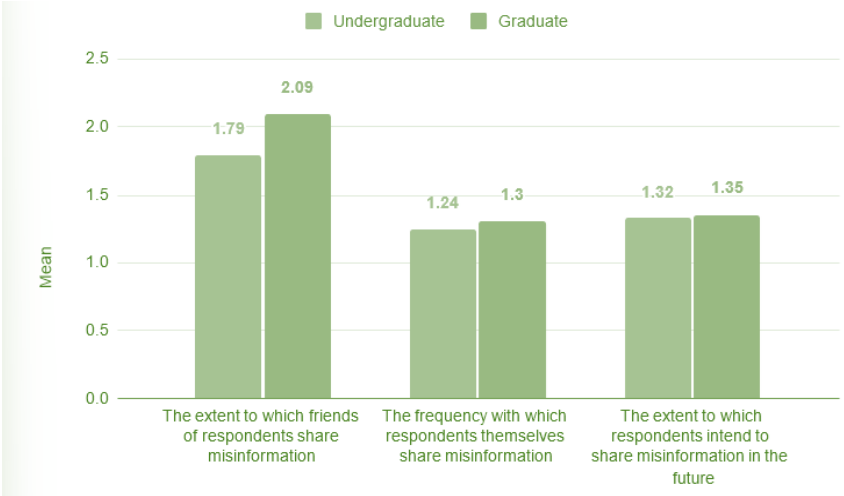

Fig. 5. Education level differences. Note: The range of responses is as follows: friends' degree of disinformation spreading ranges from 1 (“nobody”) to 4 (“everyone”). The volume of false information respondents divulged: From 1 ("never shared") to 4 ("always share"). Future sharing intentions range from 1 ("surely will not share") to 4 ("surely will share").

Further t-tests were conducted to explore the differences based on educational levels, revealing four questions where undergraduates rated their motivations higher. The most notable difference was in the question "Sharing helps me to get more related information," which yielded a p-value of 0.012. The second-highest significance was found in "Sharing helps to keep me updated on the latest happenings around me," with a p-value of 0.018. The other two questions focused on gaining insights from others and the relevance of the information to personal beliefs. Importantly, three of these four questions were entered on individual motivations, while one related to the characteristics of the information itself.

These findings suggest that undergraduate students are more likely to share misinformation as a means of social engagement, actively seeking interactions with their peers. This desire for connection may inadvertently contribute to the spread of misinformation, revealing a complex relationship between social motivations and the nature of the information shared. Understanding these variations in motivations across educational levels can inform strategies aimed at mitigating misinformation spread on social media platforms.

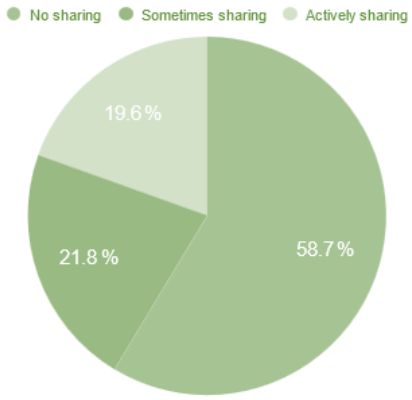

Fig. 6. MSI distribution among responders as a percentage.

This analysis underscores the need for targeted interventions that consider the motivations of different demographic groups when addressing misinformation. By tailoring approaches to the specific reasons behind sharing behaviour, it may be possible to reduce the dissemination of false information while fostering healthier online communication.

3.3 Reasons and consequences of misinformation sharing

Respondents rated their agreement with 26 statements regarding their reasons for sharing misinformation on social media using a 5-point scale, where 1 indicated "strongly agree" and 5 indicated "strongly disagree." The top five motivations for sharing misinformation included four individual-oriented reasons: “Information sharing helps you get other people’s views regarding the information or event,” “Sharing helps you express your opinions,” “You enjoy sharing information with others,” and “Sharing information makes you feel good.” The fifth reason, linked to information characteristics, was “The information seems useful to you or others,” which ranked second with a mean score of 2.44 (SD = 1.15).

Additionally, a significant majority of respondents (74.7%, n=268) believed that spreading misinformation could lead to negative societal outcomes, while 22% (n=79) recognized emotional repercussions. During the pandemic, 66.4% (n=237) reported that misinformation related to COVID-19 heightened anxiety and trust issues (M=2.1). Furthermore, 18.8% (n=67) admitted that misinformation prompted unnecessary behaviors. Regarding feedback on shared misinformation, 48.4% sometimes received responses, while 26.6% consistently got feedback about the incorrect

information they shared. These insights reveal the complex motivations and consequences surrounding misinformation sharing, especially during critical times like the pandemic.

3.4. Development of Misinformation Sharing Index

The Misinformation Sharing Index (MSI) was developed by summing two original variables, resulting in scores of 0, 1, or 11. A score of zero indicates "no sharing," one represents "moderate misinformation sharing," and eleven signifies "actively misinformation sharing." The percentage distribution for these categories is shown in Fig. 6. To further investigate the dynamics of misinformation sharing, Pearson's correlation analysis was performed to examine the relationships between MSI and various demographic and behavioural factors, providing insights into the motivations and patterns related to sharing misinformation among participants

Table 2. Original variables used for calculating MSI

Variable	Options - score
1. Do you think the information that you spread is misinformation?	No - 0 Yes - 1
2. How much of the information you share is misinformation according to you?	Less than 10% - 0 More than 10% - 10

Table 3. Groups of questions according to correlation values between questions

Group	Questions
1. Recreation	1. I enjoy sharing information with others. 2. Sharing information makes me feel good. 3. Sharing information is a good way to relieve boredom. 4. I like chatting around with that information.
2. Awareness	1. Sharing helps me to get more related information. 2. Sharing helps to keep me updated on the latest happenings around me. 3. Information sharing helps me get other people's views regarding the information or event. 4. Sharing helps me save and remember useful information.
3. Self-impression	1. I want to look knowledgeable to others by sharing. 2. I want to be influential by sharing. 3. Sharing information looks me cool and educated in groups.

	4. Sharing is an internet culture, and I share because everyone shares.
4. Social Expression	1. Information sharing helps me to keep in touch with friends. 2. Sharing helps me to interact with people and break the silence. 3. Sharing helps me to enhance my interpersonal relations with others. 4. Sharing helps me express my opinions.

The results from the Chi-squared test concerning the Misinformation Sharing Index (MSI), detailed in Table 4, illustrate significant relationships between the MSI and selected variables. Notably, 80.3% of male respondents reported actively sharing misinformation on social media. Among those who consistently disseminate misinformation, 25.4% are classified as highly active users, while 69.0% are moderately active.

Interestingly, over two-thirds (68.1%) of students who refrain from sharing misinformation typically spend less than two hours daily on social media. Furthermore, 38.9% of these students strongly believe that COVID-19-related misinformation contributes to anxiety and trust issues in society. Among the students who regularly share misinformation, 53.5% receive feedback occasionally, while 26.8% get feedback consistently regarding the misinformation they post. A significant majority (82.0%) of those who do not share misinformation contend that spreading false information could lead to negative societal impacts.

Additionally, one-third (33.3%) of students who avoid sharing misinformation firmly reject the idea that they do so to impress others, contrasting with only 9.9% of active misinformation sharers who claim to share information for that reason. This data sheds light on the intricate motivations and attitudes surrounding misinformation sharing among college students, suggesting a nuanced understanding of social media behaviour.

4. DISCUSSION

Misinformation sharing is widespread among college students, with about 63% reporting that they have seen friends share false information on social media. Despite potential bias in self-reporting, approximately 20% of students admitted to sharing misinformation themselves. Additionally, around 27% acknowledged having encountered or contributed to misinformation during online interactions. This indicates a notable disconnect between recognizing misinformation and accepting personal responsibility for its dissemination, reflecting broader challenges in how young adults engage with information online.

Table 4. Misinformation Sharing Index bivariate analysis results

Variable	Category	No sharing	Sometimes sharing	Always sharing	Total*	p-value
Which gender do you associate with yourself?	Female	23.8	12.8	18.3	31.5	0.10730
	Male	76.2	87.2	81.7	44.1	

Are you active on social media?	Not active	13.7	5.1	5.6	21.6	0.02107
	Moderately active	73.4	76.9	69.0	41.3	
	Highly active	12.8	17.9	25.4	54.2	
How frequently do you use social media?	0-2 times per day	26.1	23.1	15.5	34.5	0.05215
	3-5 times per day	31.3	23.1	19.7	32.6	
	6-8 times per day 8-11 times per day	26.5	25.6	31.0	42.8	
	12+ times per day	5.6	10.2	12.7	58.6	
		10.4	17.9	21.1	56.9	
How long do you spend every day on social media?	0-2 hours	68.1	55.8	35.7	32.2	0.00135
	2-3 hours	17.1	24.7	37.1	55.5	
	3-4 hours	9.0	10.4	14.3	48.6	
	4-5 hours	2.8	5.2	4.3	53.8	
	> 5 hours	2.8	3.9	8.6	60.0	
Do misinformation related to COVID-19 leads to anxiety and trust issues among people?	Strongly agree	38.9	37.2	23.9	36.0	0.02637
	Somewhat agree	34.1	28.2	25.4	55.5	
	Neutral	19.4	20.5	29.6	47.4	
	Somewhat dis-agree	4.7	6.4	12.7	58.3	
	Strongly disagree	2.8	7.7	8.4	66.7	
What could be the consequences of spreading misinformation according to you?	Bad Societal consequences	82.0	64.1	64.8	35.7	0.00038
	Bad Emotional consequences	16.6	26.9	32.4	55.7	
	Bad Family related consequences	1.4	9.0	2.8	75.0	
How often you get the feedback if you shared any misinformation?	Never	28.4	24.4	14.1	32.6	0.03296
	Sometimes	47.9	46.2	53.5	42.3	
	Regularly	12.8	21.8	26.8	57.1	
	Always	10.9	7.7	5.6	30.3	

Self-Impression Group (As given in Table 3)	Strongly agree	1.9	3.8	0.0	42.9	0.01749
	Somewhat agree	5.7	10.3	9.9	55.6	
	Neutral	24.3	37.2	36.6	51.9	
	Somewhat dis-agree	34.8	19.2	35.2	35.4	
	Strongly disagree	33.3	29.5	18.3	34.0	

*Total = Sometimes + Always sharing

All the values are in %

Table 5. Results of t-tests on differences based on socio-demographic attributes

Reasons	**Mean**	**Gender**			**Education**		
		Male	**Female**	**t-test**	**UG**	**Graduate**	**t-test**
1. Sharing information makes me feel good.	2.62	2.58	2.78	1.49 *	2.63	2.59	-0.30
2. I enjoy sharing information with others.	2.61	2.55	2.84	1.67 **	2.61	2.59	-0.19
3. Sharing information is a good way to relieve boredom.	3.13	3.01	3.59	3.41 ****	3.07	3.32	1.60 *
4. I like chatting around with that information.	3.19	3.15	3.32	1.24	3.21	3.12	-0.65
5. Sharing is an internet culture and I share because everyone shares.	3.92	3.84	4.26	2.66 ***	3.89	4.02	0.92
6. Sharing helps me to interact with people and break the silence.	3.00	2.96	3.15	1.02	2.95	3.14	1.29 *
7. Information sharing helps me to keep in touch with friends.	2.96	2.93	3.07	1.01	2.91	3.08	1.03
8. Sharing information looks me cool and educated in groups.	3.68	3.65	3.91	1.90 **	3.67	3.73	0.37
9. Sharing helps to keep me updated on the latest happenings around me.	2.68	2.67	2.74	0.49	2.60	2.91	2.10 **
10. Sharing helps me get more related information.	2.65	2.62	2.76	0.87	2.56	2.89	2.26 **
11. Information sharing helps me to get other people's views regarding the information or event.	2.41	2.42	2.35	-0.48	2.34	2.62	2.00 **
12. Sharing helps me save and remember useful information.	2.62	2.61	2.66	-0.82	2.57	2.77	1.42 *
13. Sharing helps me express my opinions.	2.49	2.50	2.47	-0.17	2.47	2.55	0.59
14. Sharing helps me enhance my interpersonal relations with others.	2.99	2.98	3.03	0.29	2.99	2.99	-0.02

15. I want to be influential by sharing.	3.51	3.46	3.72	1.63 *	3.51	3.53	0.21
16. I want to look knowledgeable to others by sharing.	3.64	3.56	3.93	2.27 **	3.68	3.52	-1.06
17. The information can be a good topic to start a conversation.	2.63	2.55	2.90	2.15 **	2.59	2.74	0.99
18. The information you are sharing is about a very sensitive topic.	3.17	3.07	3.55	3.27 ****	3.12.	3.29	1.21
19. The information is eye-catching and looks good.	3.06	2.98	3.38	2.73 ***	3.01	3.23	1.63 *
20. The information is entertaining.	3.05	2.98	3.30	2.02 **	3.00	3.20	1.38 *
21. The information is related to your beliefs.	2.98	2.96	3.07	0.75	2.92	3.16	1.84 **
22. The information seems useful to me or others.	2.45	2.44	2.47	0.23	2.43	2.49	0.42
23. The information comes from my close friends or family or relatives.	3.10	3.10	3.09	-0.02	3.09	3.12	0.21
24. The information has a high number of likes or shares on social media platform.	3.32	3.27	3.26	1.32 *	3.30	3.38	0.56
25. The information is shared by a well-known and trusted person or by a highly influential person.	2.83	2.85	2.77	-0.49	2.79	2.95	1.01
26. I share information if it looks frightening.	3.57	3.54	3.69	0.95	3.58	3.55	-0.18

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, **** $p < 0.001$

All the questions with p-values less than 0.001 are most significant and marked as" ****" and other questions are marked according to p-values mentioned above.

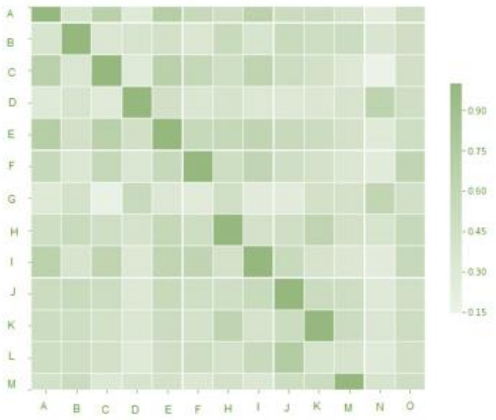

Fig. 7 All correlations above the 0.5 threshold are shown on a correlation heat map. Note: The labels (A-O) correspond to the individual questions included in the appendix's Table A.7.

Misinformation sharing has emerged as a notable issue among college students, with recent findings indicating that approximately 63% of these individuals have observed their peers disseminating misleading information via social media platforms. Despite the potential for self-reporting biases, particularly in the context of acknowledging one's own misinformation sharing, around 20% of the respondents admitted to having shared incorrect information themselves. This dynamic underscore a concerning trend in the college demographic, revealing that misinformation sharing is not merely an isolated behaviour but a prevalent social phenomenon.

Interestingly, the data suggests a gendered aspect to this behaviour. Female students reported that their friends tend to share misinformation more frequently than their male peers do. However, when comparing graduate and undergraduate students, the pattern shifts; within graduate cohorts, males and females appear to share misinformation at nearly equivalent rates. Conversely, among undergraduate students, males are notably more active in misinformation sharing, with figures indicating that 35% of male undergraduates engage in this behaviour compared to 18% of female undergraduates. This suggests that undergraduate males may be more inclined to share misinformation, a trend that warrants further examination.

Moreover, the frequency of social media use plays a significant role in misinformation sharing behaviour. Students who engage with social media platforms more than 12 times a day tend to share misinformation consistently. This behaviour is particularly pronounced regarding topics like COVID-19, where many students acknowledge that misinformation contributes to increased anxiety and trust issues within their social circles.

To further investigate these dynamics, a correlation matrix was calculated to identify relationships between various questions regarding misinformation sharing. The resulting heat map illustrates significant correlations, allowing for the classification of questions into four distinct categories: recreation, awareness, self-impression, and social expression.

The findings indicate that individual motivations predominantly drive the sharing of misinformation, with only one of the top five reasons relating to the characteristics of the information itself. The primary motivations include gathering opinions from others, enjoyment derived from sharing information, and self-expression. This observation aligns with existing literature that emphasizes the role of non-cognitive factors—such as socialization and self-expression—in shaping information-sharing behaviours among individuals.

Interestingly, gender differences were observed in the context of misinformation sharing. Males reported a greater inclination to share and express intentions to share misinformation compared to females. This trend is consistent with prior research indicating that female individuals tend to be more careful and critical regarding the quality of information they share. It appears that females are more likely to evaluate multiple aspects of information before disseminating it, suggesting a more cautious approach to information sharing.

Nonetheless, further research is needed to assess the significance of these gender differences. Previous studies have highlighted that females generally share more information on social media platforms than males, often motivated by a desire for communication and connection with others. While the top five reasons for sharing information are similar across genders, males report higher rates of misinformation sharing.

For graduate students, the most significant reason for sharing information is its perceived usefulness, while undergraduate students are more inclined to share information to elicit reactions or gain insights from their peers. This distinction indicates that graduate students may prioritize the utility of

information, while undergraduates often share information with the intent of understanding others' perspectives.

Furthermore, individual motivations related to self-impression, socialization, and recreation are prominent among the reasons students choose to share information. A notable portion of students—approximately one-third—expressed a tendency to cross-check the information they encounter on social media. This behaviour is relevant considering studies suggesting that online trust issues are negatively correlated with the act of verifying the authenticity of shared information. Conversely, factors such as social media fatigue and the desire for self-expression appear to positively influence the sharing of misinformation.

The study also revealed that many respondents are often unaware when they have shared incorrect information, highlighting a disconnect between awareness and behaviour in the context of misinformation sharing. This lack of awareness may contribute to the persistence of misinformation in online environments, particularly among college students who are generally perceived as tech-savvy.

Given that this research involves human respondents, it is essential to acknowledge the potential limitations inherent in self-reported behaviours. Individuals may not accurately represent their actions, particularly regarding negative behaviours like misinformation sharing. The study utilized a non-probability sampling technique and involved a relatively small data set, limiting its generalizability to the entire population of college students in India. Future research could enhance the understanding of misinformation sharing behaviours by analysing relationships across larger, more diverse samples and employing probability sampling methods for improved validation.

Individual motivations largely shape the landscape of misinformation sharing among college students, with distinct differences observed based on educational level and gender. The findings highlight the importance of understanding these dynamics to effectively address the challenges posed by misinformation on social media platforms. By recognizing the role of socialization and self-expression, stakeholders can better devise strategies to mitigate the spread of misinformation and promote more responsible sharing behaviours among students.

5. CONCLUSION

This observational study sheds light on the widespread sharing of misinformation among college students and their peers on social media platforms, revealing significant differences based on gender and educational level. Most students who engage in this behaviour report being moderately active on social media. The research also establishes a strong link between social media exposure and heightened mental stress levels, particularly during the COVID-19 pandemic, emphasizing the need for psychosocial support to protect college students' mental health during and after such crises.

The findings suggest that students are more motivated by individual factors when sharing misinformation rather than the intrinsic qualities of the information itself. The overwhelming amount of online content makes it challenging for students to differentiate between misinformation and accurate information. Therefore, effective fake news detection is vital, especially in times of global emergencies like the pandemic, when internet usage among college student’s spikes.

To mitigate the spread of misinformation, the study recommends that individuals critically assess the credibility of information before sharing it on social media. This highlights the need for information literacy programs at the community level, particularly in India’s rural and urban areas. These initiatives should aim to equip students with the skills necessary to understand how information is produced and valued, particularly in an era where social media is a primary communication channel.

The authors plan to conduct more detailed analyses and modelling to further explore the effects of misinformation dissemination on students during the pandemic. This future research will aim to enhance the understanding of misinformation's influence on student behaviour and mental health, ultimately contributing to the development of more effective strategies for controlling its spread in online environments. By addressing these issues, educational institutions can play a crucial role in promoting a more informed and resilient student population.

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