



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 13, Issue, 10, pp.19196-19201, October, 2021

DOI: <https://doi.org/10.24941/ijcr.42484.10.2021>

RESEARCH ARTICLE

A QUALITATIVE EXPLORATION OF SOCIO-PSYCHOLOGICAL FACTORS AND SOCIAL MEDIA INFLUENCE ON HEALTH PROTECTIVE BEHAVIOURS DURING COVID-19 PANDEMIC AMONG INDIAN YOUNG ADULTS

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ARTICLE INFO

Article History:

Received 18th July, 2021
Received in revised form
10th August, 2021
Accepted 19th September, 2021
Published online 30th October, 2021

Key Words:

COVID-19, health protective behaviours, mask wearing behavior, socio psychological factors, social media influence, young adults, India

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ABSTRACT

Background: With COVID-19 cases on the rise again in India, the practice of health-protective behaviours is critical to prevent the third wave. The current study examined the socio-psychological factors affecting indulgence in health protective behaviours and social media influence among Indian young adults. **Methods:** To identify the role of psychological traits acting as barriers to health-protective behaviours in India, researchers conducted semi-structured interviews which were thematically analyzed. **Results:** Overall, the paper unveils the psychological roots of individual differences in practicing health protective behaviours. The researchers found the 'chameleon effect' theme as an important socio-psychological factor affecting health protective behaviours that had previously not been investigated in relation to COVID-19. Responses obtained from the interview also stated the need for regulation of information on social media, thus making broadcast media as people's ultimate source of media. **Conclusion:** Findings from this study may be used to guide health-protective behaviour promotion in times of the third wave of COVID-19 or pandemics/epidemics that may arise in the future. We urge other researchers to engage in an in-depth study of the themes found in the current study and explore them individually.

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Citation: Richa Saini, Sanjula Arora, Ekta Jha and Dr. Nimisha Kumar. "A qualitative exploration of socio-psychological factors and social media influence on health protective behaviours during covid-19 pandemic among indian young adults.", 2021. *International Journal of Current Research*, 13, (10), 19196-19201.

INTRODUCTION

With over a year of enduring the COVID-19 pandemic, we are still in a catastrophic plight with its spread. The pandemic has not only caused significant global economic and social disruption, but it has also left millions of people in a state of turmoil. Despite the fast-track vaccine drive going on across the world, time is needed to ramp up the vaccination and its distribution. Unfortunately, the only option we have for the foreseeable future is to befriend the precautionary measures emphasized by WHO (World Health Organization, 2021) such as physical distancing, wearing a mask, keeping rooms well ventilated, avoiding crowds, cleaning hands with soap and water or an alcohol-based sanitizer, and coughing into a bent elbow or tissue etc. While we are on the right track with the vaccine, the best way to curb the virus currently is by following the non-pharmaceutical interventions that are the health protective behaviours (Lüdecke, 2020). The real challenge, however, lies in an individual's awareness about the infectiousness of the disease (Hassan et al., 2017) and it being

translated into usage of protective behaviours (Ho, 2013; Cain et al., 2018; Li et al., 2003).

Mask Wearing Behaviour: As opposed to handwashing, which is considered to be one of the effective measures in preventing infectious diseases, wearing masks isn't received well across various countries even today (Barceló, 2020). Despite the fact that masks had become a popular protective tool mandated by the WHO, many people either did not wear them at all or did not wear them properly. Unlike in East Asia, where wearing masks was widely adopted as a form of prevention following the outbreak of severe acute respiratory syndrome (SARS) in 2003 (Barceló, 2020), in other countries like India, wearing a face mask hasn't been a popular concept. Some researchers (Miguel, 2021; Carbon, 2020; Wilson, 2020) have proposed possible explanations for people not wanting to wear face coverings despite the WHO (Coronavirus disease, 2021) relating use of masks to suppression of transmission of COVID 19 and calling it a comprehensive strategy to save lives. To comprehend how socio-psychological factors affect people not complying with

the usage of face masks, we must first begin to understand the emotions experienced by people while wearing masks. Demonstrating the impact of face masks on the readability of emotions, Claus-Christian Carbon (Carbon, 2014) found that participants lacked confidence in assessing the emotions of the individuals wearing a face covering. The study also found that reading emotions accurately is relatively low, indicating a high level of irritability among people who are unable to read others' emotions, which could lead to communication stress (Campagne, 2021). In his previous study, Claus-Christian Carbon (19) also discussed the relation between people not wanting to wear a mask when surrounded by too many non-wearers. The study found that when the participants were around non-mask wearers, they began to feel strange, and they linked this to emotions being a major factor in people opting out of wearing masks. Interestingly, the higher the frequency was of people wearing masks in the displayed social group, the less strange participants felt about themselves.

Our perception of avoiding masks is closely related to the social group around us, according to the above-mentioned study. Since India is a collectivistic society, people believe in maintaining amicable relations within the group (Kinnunen, 2015), which is why they act in accordance to the greater good of one's defined in-group(s). This could be explained by the social impact theory (Latané, 1981) which discusses the influence a group can have on an individual based on three factors: the group's strength (whether it is powerful or not), the group's immediacy (the physical or psychological distance one feels), and the total number of people in the group who exert social influence on the individual. The amount of influence an individual feels through a group is proportional to the number of people in the group. A greater number of people in a group with a high ability to exert influence, combined with greater proximity, can lead to an individual being influenced. Another aspect that seems to have an influence on adoption of face masks are the anti-mask attitudes which have studied by various researchers across the world. One of the studies (Taylor, 2021), examined psychological reactance as a perceived threat due to which people avoid wearing masks to assert their freedom of choice by rejecting rules. A holistic view of it could be derived from the previous pandemic like the 1918 Spanish flu pandemic during which mandating the use of masks in public was met with opposition in San Francisco in 1919. Adding to the existing literature, Walker & McCabe (Walker, 2021) came up with denial being used as a defense mechanism by people against the virus. They found that the threat activation of the virus led to it being denied as a real threat by people. The particular reason for this was the reality of the virus is too threatening and anxiety-provoking for people to accept. Consequently, they naively minimize engagement in health-protective behaviours associated with COVID-19.

Use of social media during COVID-19: In addition to these factors, people's preferences for the medium through which they consume information influence their mask-wearing behaviour. Social media platforms have played an important role in the fight against COVID-19, providing millions of people with health and prevention-related information. Social media has proven to be an effective way to communicate with a large audience while sitting in the comfort of our own homes. According to Statista (Sandhya Keelery, 2021), the number of social media users in India in 2021 increased to 400.3 million. Since most people were at home when the Coronavirus was at

its peak in India, it is evident that the pandemic led to a spike in social media usage across India. There is evidence that during community crises, people frequently seek event-related information from social media in order to stay informed about the crisis (Jones, 2017). The use of broadcast media as a source of information lacks for being the ultimate medium (Jones, 2017). This in turn results in exposure to social media which has been associated with disseminated informers, providing misleading information (26). This could lead to spread of unauthentic medical precautions and information (Mourad, 2020) such as myths about the virus's origins, the protective effects of drinking or gargling alcoholic beverages for COVID-19 protection in Iran, and false statements about the vaccine (Sharma, 2020). According to a study conducted in April 2020, false information about the virus's transmission on social media and how long it survives on various surfaces had caused widespread panic among the general public. In India, information about the use of herbal medicines, religious and spiritual approaches to treating COVID-19 patients was widely disseminated. People lacked knowledge, and many conspiracies were being spread on social media (Kadam, 2020).

Previous research (Klebba, 2021) has also shown that during controversial coverage, people tend to gravitate toward information that supports their world views. This, in turn, may result in the occurrence of confirmation bias (Klebba, 2021; Leng, 2021), which refers to the tendency to rely on what one wants to believe in situations where an individual may share the news with a strong confirmation bias. This increases the likelihood of not engaging in health-promoting behaviour (26). In terms of other factors to consider, studies have shown that social-psychological factors (Choma, 2021) such as a person's level of compliance, emphaticity, antisociality, or risk-taking, among others (Miguel, 2021), play an important role in understanding people's beliefs about certain phenomena.

Theory of Psychological Reactance: Brehm (Grundmann, 2021) proposed the Psychological Reactance Theory, which states that every individual believes they have some control over their behaviour. However, when their freedom is restricted in some way and they are unable to exercise it, they often become enraged, hostile, aggressive, and uneasy. Thus, they experience strong motivational arousal to restore it. Due to the current pandemic, lockdowns have been declared in India and several other countries, and many restrictions and safety guidelines have been imposed on all people. As a result, it severely limited people's freedom. Using the above-mentioned theory in conjunction with this scenario, we can investigate how psychological reactance occurred among these people during COVID-19, as well as how this phenomenon influenced their practice health-protective behaviours. The overall significance of these studies is that a variety of factors limit the population's willingness to engage in health protective behaviours. Several evaluation studies in India have focused on the medical benefits of face masks, but very few have investigated their psychological implications (Clarke, 2015). The goal of the current study is to identify the socio-psychological factors impacting indulgence in health protective behaviours in a country where wearing a face mask has been mandated by the government since the COVID-19 outbreak. Acknowledged by the findings of the literature, a study of this nature is important in the COVID-19 era. This serves as the foundation for the current methodology, which will be described in greater detail.

METHODS

The Aim of the study: To determine the impact of socio-psychological factors and social media influence on health-protective behaviours among Indian young adults during COVID-19.

Sample: A total of $N_{\text{total}} = 20$ people were interviewed out of which 13 were males (65%) and 7 were females (35%) with their average age being 22.35 years. The participants were selected using a non-probability convenience sampling method. The researchers sent an email or message to potential participants requesting volunteers to take part in interviews with regard to their opinions on health-protective behaviours.

Ethical Protocol: Confidentiality of the participants was strictly maintained. All participants provided informed consent. The study brief informed them that the study was strictly for academic and research purposes and they were free to withdraw at any time, should they wish to do so. Participants consented to the recording of interviews, which were subsequently anonymized and transcribed.

Interview data collection: The interviews included a total of 16 questions that were collaboratively developed by the researchers and grounded in their interest to measure awareness regarding Covid-19, health-protective behaviours, and social media influence in young adults. The interviews were conducted over zoom call or voice call where the calls were digitally recorded with the participants' permission and later transcribed. The total duration of all interviews was 279 mins ($M = 13.95$, $SD = 1.761$).

Data Analysis: The data was analyzed on the grounds of the six-phase guide laid out by Braun & Clarke (36); become familiar with the data, generate initial codes, search, review, define themes and write up. The goal was to structure the interview content to identify common themes and to further widen the understanding of determinants causing people to refrain from practicing health-protective behaviours. After the interviews, the authors read the transcripts and relevant phrases from interviews were condensed to identify potential themes, which they then forwarded to the senior author. Followed by this, fragmented texts were further explored, and various themes were found using the existing literature review as well as additional papers explaining the themes in general.

RESULTS

In this section, we present the findings from the interviews and the analysis found 8 different themes. Table 1 presents the themes and interview statements supporting them. The study also found that personality, people's influence, and staying with ill/elderly family members influenced interviewees' choices to practice health protective behaviours, while fewer people reported a link between culture and practicing health protective behaviours. These elements are discussed in detail below:

Personality: The majority of interviewees considered personality to be an important factor influencing the use of health-protective behaviours.

PARTICIPANT G: "People with a rebellious personality tend to break the rules and thus do not comply with the legal norms

or precautions, and people who are more inclined to having a hygienic environment indulge in these behaviours more."

PARTICIPANT M: "Personality influences everything about our behaviour. My friend has a very cautious and paranoid personality, so he isolates himself and takes all sorts of precautionary measures."

PARTICIPANT S: "People with paranoid personalities become more paranoid and take all precautions, whereas those who act brave, even if they aren't, intentionally take risks and don't take precautions."

Many participants gave similar responses, stating that people who are careless or anti-social may avoid health-protective behaviours because they don't care about other people. Nonetheless, some respondents didn't seem to find a link between personality factors and their influence on people who engage in health-protective behaviours. These recent findings are related to the work of Miguel et. Al., (13) which is cited in the literature.

Staying with ill/elderly family members: Most of the participants responded that a higher number of precautions were being taken by the ones staying with and around an elderly family member, including those who had an illness themselves.

PARTICIPANT J (SUFFERING FROM ANEMIA): "Everyone in my family took more precautions because I had normocytic normochromic anemia at the start of the virus."

PARTICIPANT K (SUFFERING FROM LUPUS): "Everyone around me takes extra precautions because I have an autoimmune disease and the body doesn't form antibodies." When talking about extra precautions being taken by those around elderly members

PARTICIPANT S: "Yes, we have to keep extra precautions and cleanliness so that elderly or ill family members can feel safe in their own homes."

PARTICIPANT A: "It depends on the person's family dynamics. If one is affectionate with that person, one may become paranoid and take additional precautions, whereas if he/she is not quite affectionate, they may not be concerned about the health of the ill/elderly family member and their health-protective behaviour will not be affected." This factor has not been studied previously and has added a new dimension to the current study.

Role of Culture: While the majority of interviewees reported no link between culture and one's practice of health-protective behaviours, some interviewees believed that one's culture did influence their practice of health-protective behaviours.

PARTICIPANT M: "In rural cultural societies, people don't care about precautions, or believe that covid-19 even exists. However, in Urban cultural societies, as airports are in cities, and the virus was assumed to have come from outside India, they tend to take more precautions".

PARTICIPANT S: "Culture impacts people's behaviour. As in cultural festivals, People cannot follow social distancing practices properly such as, in religious institutions like temples, etc. which puts people at risk".

Table 1. Thematic Analysis of health protective behaviours, social media influence etc

THEMES	CODES	REPRESENTATIVE QUOTATIONS
Psychological Reactance	Feeling a loss of freedom due to lockdown and restrictions	<ul style="list-style-type: none"> Everyone is fed up with being asked to live in a certain way. We feel suppressed because of which we don't follow precautions anymore. People want their normal life back; they are tired of following all these precautions.
Portraying Consensus/Social Conformity	Influence of group causes change in behaviour so as to fit in	<ul style="list-style-type: none"> Since avoiding a mask covering is an accepted opinion among a group of people, people are more likely to follow it People feel socially awkward, and they don't want to stand out as dumb for following the precautions. They remove their masks to fit in. A sense of alienation is felt that we might not seem as confident as others because of which we remove the masks
Optimism Bias/unrealistic optimism	optimistic belief that they will not get infected with COVID-19	<ul style="list-style-type: none"> People think that they will never catch COVID and that their immunity is very strong Since I have not caught the virus yet, I don't think I will be infected now. We believe that we had been fooled that there existed any sort of deadly virus. But we never got infected, so we now feel that it was just a conspiracy.
Compliance	Following social and legal norms out of compulsion	<ul style="list-style-type: none"> We mostly tend to wear masks because it is compulsory to do so. If we would not wear a mask, we would be fined heavily. Now that the rules are relaxed, we do not follow health precautionary behaviours anymore.
Denial	Refuse to accept the reality that the coronavirus is dangerous	<ul style="list-style-type: none"> I feel like Corona isn't there anymore, it's just a government scam. For instance, when hospitals didn't get any funding, all the tests of covid used to be negative. It's all a political issue. Coronavirus is just a conspiracy theory. It's just a normal virus like fever. Farmers are saying there is no such thing as corona as they have been around thousands of people and they are still healthy. Maybe coronavirus isn't as dangerous as it is portrayed.
Confirmation Bias/ Echo chamber	Searches interpret and favour information in a way that supports one's prior beliefs.	<ul style="list-style-type: none"> Social media can be extremely polarizing because the algorithms work in a way that make you feed the things that you want to see. Social media shows selective information because of artificial intelligence whereas news channels regulate and control facts. Broadcast media don't provide fake news but they manipulate the data in a way where it is favouring the theory they want to prove making us believe what they want us to believe
Conspiracy theories	A belief that some influential organization is responsible for an event.	<ul style="list-style-type: none"> Tribal people believe that If god wants them to die they will die. A mask cannot protect them Sanitizer should be avoided as it causes skin cancer.
Communication Stress	Easy to misunderstand another person's intentions or what they are trying to communicate.	<ul style="list-style-type: none"> Removing masks facilitates conversation as you can see how interested the other person is in the conversation. Masks are very similar to another person wearing shades because you can't really tell where they are looking, what they are looking at and how they roll their eyes or if they are not and how engaged they are in the conversation. Wearing a mask restricts better flow of conversation. People tend to remove masks, because of communication problems that arise while conversing.
Chameleon Effect	Removing mask unconsciously when others also remove it	<ul style="list-style-type: none"> We tend to remove masks unconsciously. We don't know why we do it.

When comparing cultures around the world, some participants believed that some cultures were more adaptable to the use of masks than others.

PARTICIPANT A: "Some cultures are more disciplined, for example, countries like Taiwan, Japan, and Korea are much better in following precautions as compared to Asian countries like ours that have a laid-back attitude." This backed up our hypothesis and confirmed previous findings (Barceló, 2020).

DISCUSSION

Participants reported using masks only when it was mandatory, displaying the theme of compliance (a socio-psychological factor). Refer to Table 1. People avoiding face masks could also be closely related to the need for maintaining amicable relations among the group (Kinnunen, 2015). Some of the themes such as communication stress, social conformity, compliance, and the chameleon effect were all related to the respondent's mask wearing behaviour. The Chameleon effect, which depicts the unconscious behaviour of removing masks when others remove theirs, was previously an unexplored theme in regards to COVID.

People avoided face covering due to social media influence, which is consistent with previous findings. In addition to this, themes such confirmation bias or echo chamber were also found to be associated with people avoiding face covering. Thus, according to the findings of the media influence study, there is a relationship between the adoption of health-protective behaviours and a preference for broadcast media over social media, which is consistent with the findings of a previous study by Allington *et al.* (2020). Contrary to this, those in favor of social media had opposing views stating that:

"Regulated information on social media is good as it demonstrates how to practice these behaviours and people feel a part of the community even during isolation or lockdown. It is easier to connect with such information on social media as you have the option of sharing your views with other people. The information however should be cross checked." (Participant P). "Social Media is better than mainstream media, as broadcast media provides fake information in an exaggerated manner and is controlled by political parties and therefore shows selected information" (participant M). As hypothesized, there is a negative relationship between health-

protective behaviour and preference for social media over mainstream media supported by the findings of previous study (26). Therefore, it can be observed that the responses obtained from the interview stated the need for regulation of information on social media, thus making broadcast media as people's ultimate source of media.

CONCLUSION

Some of the themes mentioned above have already been studied by other researchers and are included in the current paper's existing literature. However, the researchers did find the 'chameleon effect' theme that had previously not been investigated in relation to COVID-19. Apart from the eight themes, the current study also found the role of culture, personality, illness in the family and elderly members in the family in the use of health-protective behaviours. It should also be noted that the study was undertaken during the first wave of COVID-19 which was much milder than what India is currently facing. The current situation makes this study even more significant and further research needs to be undertaken to understand the factors behind the large-scale neglect of health protective behaviours which has pushed us into the worst health emergency the country has ever seen with lakhs of lives lost to this deadly pandemic.

LIMITATIONS OF THE STUDY

The current study's findings are based on self-reported data rather than real-life observations, which may have led to participants responding in a socially desirable manner. Furthermore, the study used a comparatively small sample of individuals in comparison to the country's population. The use of the internet and convenient sampling to recruit participants may have resulted in an underrepresentation of underprivileged participants in the study, implying that a certain economic segment of the population was excluded from the study. This raises concerns of generalization due to the use of non-probability convenience sampling. Thus, our findings must be approached with caution without considering these as observed findings of adequate sample population with optimal representation of socioeconomic strata.

ACKNOWLEDGMENTS

We would like to thank everyone who took part in the study and contributed to make the research process run smoothly. Without their detailed responses, the final product would have been extremely lacking.

FUNDING

The author (s) received no financial support for the research, authorship, and/or publication of this article.

AVAILABILITY OF DATA AND MATERIALS

Data will be available by emailing sanjularora1998@gmail.com

AUTHORS' CONTRIBUTIONS

Richa Saini wrote the theoretical background, drafted the manuscript, and reviewed it. Sanjula Arora did a literature review, and drafted the manuscript. Ekta Jha designed the

questions for the interviews. The data acquisition and analysis was a joint effort by all the authors. Dr. Nimisha Kumar conceptualized the study, critically reviewed and revised the manuscript. All authors substantially contributed to the study and approved its submission. Informed consent was obtained from participants before the interview.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the author(s).

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