Original Research Article

An Experimental Investigation into the Influence of Illness-Related Emotions on Indicators of Conformity

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ABSTRACT

Background: The COVID-19 pandemic represents a massive global health crisis which has produced significant psychological fear in individuals. Fear, a survival-related emotion studied in evolutionary psychology, leads people to place importance on conformity to group norms in terms of attitudes and behaviours, leading to better odds of survival. This study strives to explore the relationship between Illness-related emotions and the indicators of conformity.
Methodology: The study employed an experimental design. Participants in the experimental group were primed by arousing disease-related threat in them, whereas the control group was not primed. Participants' tendency to endorse conformity in hypothetical situations were examined with the help of four measures- three choice-based tasks and one self-report questionnaire.
Results: The research findings revealed that illness-related fear/anxiety has an impact on behavioural conformity with the majority opinion, but this impact was not significant on other three dependent measures of conformity- Valuation of Obedience, Self- reported Conformist attitudes and Liking for people with Conformist Traits.
Conclusion: The study has implications in understanding the antecedent of conformity and the psychology of threat in the collectivistic culture of India, especially in the face of a pandemic.

Keywords: COVID-19, Conformity, Disease, Threat, Fear, COVID-19 Anxiety, Psychology of Threat.

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INTRODUCTION

When the news of the COVID-19 pandemic broke out in India in March 2020, the people of India willingly participated in a bunch of 'Nation Building' exercises to express their gratitude towards the front-line workers of the COVID-19 pandemic, irrespective of their differing political and religious beliefs. This behaviour of engaging in activity by conforming to the majority can be understood in the context of endorsing conformist behaviour in the face of the threat of an infectious disease. While conformity pressure is a common part of social life, it plays a more significant role in pandemic or pathogen threat situations. In face of a pandemic, according to Behavioural Immune System (BIS) theory [1], people are likely to develop negative emotions like anxiety, fear and aversion and negative cognitive assessment for self-protection [2]. In a recent study trying to examine the impact of the declaration of the current COVID-19 pandemic on people's mental health, it was found that negative emotions (e.g., anxiety, depression and indignation) and sensitivity to social risks increased, while positive emotions and life satisfaction decreased [3]. Therefore, it becomes important to understand the impact of illness-related emotions on social behaviours. Much of the

research done on this area has focused on human evolutionary psychology particularly, in the context of survival. In survival threatening situations, any attitude/ behaviours that helped reduce the risk of illness became an important adaptation in human beings. Schaller explains these behaviours in terms of Behavioural Immune System (BIS) which constitute a set of unconscious psychological responses which act as the first line of defense in situations where we feel vulnerable to diseases/ infections. It acts much like our physical immune system which has evolved to defend us from pathogens. These sets of responses include direct disgust responses and deeper psychological attitudes that govern our social interactions and behavioural choices [4].

Studies based on Parasite Stress Theory have shown significant effect of illness-related emotions and stress of parasitic infections on broad range of human behaviour which can range from heightened moral vigilance to increased distrust towards strangers (Xenophobia) to exhibition of high levels of conformity and strengthened in-group identity [5]. Major part of illness related threat and vulnerability is related to the consequences of non- conformity and thus, one major component of BIS is the tendency to conform as explained by the Parasite Stress Theory as well. Experimental studies have shown that inducing danger, life threatening, or death related thoughts lead to increased conformity to majority opinion [6]. Therefore, in specific kinds of life-threatening situations like a pandemic, where death related thoughts might be prevalent, tendency to exhibit higher levels of conformity can be a resultant effect. In many of the past studies, pathogen threat has been related to conformity. In one study, it was found that in comparison to the control group, those primed by pathogen threat conformed more to majority views when evaluating abstract art drawings and also rated themselves to be more conforming on a questionnaire [7]. Since the immune system works majorly on a better safe than sorry logic, the fear of contagion and perceived threat of diseases trigger our evolved tendency to exhibit heightened levels of conformist attitudes and behaviours, which can be considered traditional in the current era, but they act as an evolved shield against infections among humans.

Many studies have shown an association between pathogen prevalence and conformity. In one study, it was found that cultural differences reflect historical variability in the prevalence of disease-causing pathogens, where the areas with a higher prevalence of pathogens were associated with likeliness of emergence of cultural norms promoting greater conformity. Collectivism and conformity act as a natural guard against disease transmission. Higher ability to conform and follow social norms can serve as buffers whereas deviance would make one susceptible to diseases [8].

Murray and Schaller found that the perceived threat of diseases exerted a significant impact on conformist attitudes and behaviours. Experimentally manipulated salience of disease threat produced stronger conformist attitudes and behaviour, compared with control conditions (including a condition during which disease-irrelevant threats were salient). These results have implications for understanding conformity predictors and social consequences. [9]

The present study is based on the same variables of interest mentioned in the above study. The need for this study arises from the limitations of the generalizability of results done in an individualistic culture to infer about the population belonging to a collectivistic culture. Fincher and colleagues found that regional prevalence of pathogens has a strong positive correlation with cultural indicators of collectivism (conformity and ethnocentrism) and a strong negative correlation with individualism. [10] In most Asian countries, values of conformity and obedience are already imbibed through culture, and thus, in situations where a threat is perceived, these conformist attitudes and values gain even more importance and applicability in the society. There appears to be an evolved mechanism to avoid pathogens that involve not only out-group avoidance but also in-group approach strategies such as conformity. Especially in a collectivistic culture like India, which is characterized by a certain level of conformist attitudes and behaviours, it is important to know if illness-related emotions and threat indeed lead to an evolved tendency to exhibit higher levels of conformity based on the theory of behavioural immune system.

The present study is an effort to investigate illness-related emotions and its influence on conformist attitudes/ behaviour, which is of high relevance and interest in the light of the current COVID-19 pandemic which has brought the world to a standstill. In our daily life, on examination one can find various instances of minor defensive moves against contamination (disgust responses, avoiding public washrooms, naturally maintaining a distance when someone around us sneezes). In a pandemic, people need to follow certain precautionary measures by complying with social distancing, following the official laws as well as the unsaid

social norms that govern such lockdowns. These behaviours affect the spread of disease thereby affecting a person's overall tendency to conform which is in turn affected by illness-related anxiety or fear. In the current study, it is expected that participants in the Disease Threat condition, who were primed by asking questions about the time when they had been ill or felt threatened by an infectious disease, would be more likely to endorse conformist attitudes and behaviours in the subsequent tasks measuring their level of conformity, as compared to the Control group who were asked questions about the daily activities they engaged in a day before.

METHODOLOGY

Participants

228 participants with mean age of 23 years were selected using convenient and snowball sampling method, out of which 107 (47%) were males and 121 (53%) were females. In Disease Threat condition, the total number of participants was 114, out of which 58 (50.87%) were males and 56 (49.13%) were females. In No Threat condition (Control Group), the total number of participants was 114, out of which 49 (43%) were males and 65 (57%) were females. The sample of participants was culturally heterogeneous. Participants were well-versed in English.

Research Design

The current study employed a between-groups design with one independent variable having two levels. The independent variable was the manipulation of illness-related anxiety/ fear which had two levels- In Disease threat condition, participants were primed using a series of questions regarding a time when they felt vulnerable to or were suffering from a disease/ illness and were asked to write their thoughts and emotions in detail about the same. In the No threat condition (Control Group), participants were asked a list of questions about the activities they engaged in the previous day and were asked to discuss their thoughts and feelings in detail about the same.

Measures

Effect of manipulation of illness related anxiety/fear on endorsing conformist attitudes and behavior was measured with the help of four measures representing different indicators of conformity:

a) Behavioral Conformity to Majority Opinion: To assess participants' tendency to conform to majority opinion, they were presented with a scenario where they were shown pictures of two Jars. Their task was to indicate whether they agreed or disagreed with the idea of changing the current grading system by putting a coin in either Jar A or Jar B. One of the jars specified the number of people agreeing to the change and was thus labeled AGREE, whereas the other one specified the number of people disagreeing to the change and labeled DISAGREE. The number of people agreeing or disagreeing to the change was depicted in terms of the number of coins contained in the jar. The picture of jars was counterbalanced in such a way that half the participants in each of the groups were presented with a jar containing 30 coins labeled as 'AGREE' indicating that 30 people had agreed to the change and another jar containing 70 coins labeled as 'DISAGREE' indicating that 70 people had disagreed with the change whereas the other half were shown a jar with 70 coins labeled as 'AGREE' indicating that 70 people had agreed to the change and another jar with 30 coins labeled as 'DISAGREE' indicating that 30 people had disagreed with the change

b) Liking for people with Conformist Traits: Participants were presented with two brief character profiles, one being a conformist characterized description and the other one being a non-conformist characterized description. Participants rated the likelihood of having each person as their friend on a scale of 1= not at all interested to befriend to 5= very interested to befriend. The participants were told that both X and Y are the same gender as them in both the conditions. The character profiles of both X & Y were counterbalanced in such a way that half the participants in each of the groups were shown X to be a conformist and Y to be a non-conformist whereas the other half were shown X to be a non-conformist and Y to be a conformist.

c) Valuation of Obedience: Participants were presented with seven qualities and provided a hypothetical amount of $100. These seven qualities were Hardworking, financially wealthy, Independent, Open-minded, Determined/ Motivated, Religious, and Obedient. Participants' task was to indicate the qualities that they

would most likely want their children to have by allocating higher amount of money to those qualities while keeping in mind that the total number of dollars allocated to all the qualities sums up to $100. This amount of dollars to be allocated i.e., $100 was kept constant in both the conditions. Analyses of this measure focused on the dollars allocated to the quality of 'Obedience'

d) Self-Reported Conformist Attitudes: Participants' conformist attitudes were examined using a 6-item questionnaire developed by Murray and Schaller [9]. Participants provided a rating for each of the items based on the extent to which they agree with each of them on a scale of 1- Strongly Disagree to 6- Strongly Agree. Cronbach's alpha calculated for the same by the authors of the questionnaire yielded good reliability.

Procedure

Data was collected from individual participants using Google Forms. Convenient sampling and snowball sampling methods were employed to select participants for this study. Informed consent was obtained from the participants using a consent form that included information about the study embedded at the beginning of the experiment. To keep the participants from developing demand characteristics, minor deception was used where participants were told that the present study was a survey to understand individual differences in people's thinking mechanisms and choices in different situations. At the end of the experiment, to make sure that participants were fully informed about the study and did not feel uncomfortable in any way, the details of the study were provided with the help of an elaborate debriefing.

RESULTS

Table 1: Proportion/Medians & SD of the four primary dependent variables in each of the two conditions

	Disease Threat Condition		No Threat Condition		p-value
	Prop. / Median	*SD*	*Prop. / Median*	*SD*	
Behaviour Conformity to majority opinion	0.67	0.47	0.32	0.47	< 0.001
Liking for people with Conformist Traits	5	1.35	5	1.14	0.272
Valuation of Obedience	10	6.80	10	5.67	0.167
Self-reported Conformist Attitudes	23	4.49	22	5.16	0.260

The hypotheses for the four dependent variables (Behavioural Conformity to Majority Opinion, Liking for People with Conformist Traits, Valuation of Obedience and Self-reported Conformist attitudes) were tested separately to study the effect of the two levels (Disease Threat condition and No Threat condition) of the independent variable. As shown in Table 1, for the first D.V i.e., Behaviour Conformity to Majority Opinion, the proportion of participants choosing the jar with majority pennies in Disease Threat condition was 0.67 while that for No Threat condition was 0.32. To check whether the obtained difference between the proportions of participants choosing to conform to majority opinion in both the groups was significant, Two Samples Proportion test was carried out. The obtained chi-square had a p-value less than .05, indicating that the observed difference was significant. (X^2= 26.68, $p < .001$) The results indicated that the number of participants choosing the Jar with majority pennies was higher in the Disease Threat condition as compared to No Threat condition, revealing a significant effect of illness related anxiety/ fear on behavioural conformity with majority opinion.

For the other three dependent measures, since the assumption of normality was not met, Wilcoxon Rank Sum test was carried out to assess the medians of the remaining three dependent measures. For the second dependent variable i.e., Liking for people with Conformist traits, the median of the number of people liking conformist character profiles was assessed in both the conditions. The obtained W (W= 6790.5) had a p-

value greater than .05 indicating that the difference between the medians of the two groups was not significant, thereby revealing that the effect of illness related anxiety/ fear on liking for people with conformist traits was not significant. Similarly, for the dependent variable of Valuation of Obedience, the medians of the amount assigned to the trait of Obedience in both the conditions were assessed. The obtained W (W= 6965) had a p-value greater than .05 indicating that the difference between the medians of the two groups was not significant, thereby revealing that the effect of illness related anxiety/ fear on valuation of obedience was not significant. For the last dependent measure i.e., Self-reported conformist attitudes, the medians of the score obtained on the Conformist Attitude Scale were assessed in both the conditions. The obtained W (W= 6817.5) had a p-value greater than .05 indicating that the difference between the medians of the two groups was not significant, thereby revealing that the effect of illness related anxiety/ fear on people's self-reported conformist attitudes was not significant.

DISCUSSION

The current experiment investigated the impact of illness related anxiety/ fear on conformist attitudes and behaviour. The findings showed that when the threat of diseases was temporarily made salient, people exhibited higher levels of behavioural conformity with majority opinion, in comparison to the control group. Participants in the Disease Threat condition exhibited higher levels of behaviour conformity by conforming to the Jar having majority pennies as compared to participants in the No Threat condition. Other than this, no comparable significant increase was seen in the conformity levels of participants in the other three dependent measures- Liking for people with Conformist Traits, Self-reported Conformist Attitudes, and Valuation of Obedience of the experimental group. Our finding replicates the results of the study done by Murray and Schaller [9] where they also found a significant effect of perceived vulnerability to disease on Behavioural Conformity, but they also found a near significant effect on Liking for people with Conformist Traits, whereas the other two dependent measures showed an insignificant effect. Despite of conformity and compliance being an evolved adaptive response in face of pathogen threat, previous studies have shown that individual differences (based on gender, age, socio- economic background, knowledge, religious and personal beliefs associated with the pandemic) affect risk perception or perceived threat of the disease, which in turn has a direct effect on people's willingness to exhibit conformity or comply by taking unofficial or official precautionary measures [11-12]. Furthermore, showing a strong intention to conform and comply with government and socially advised preventive measures have been associated with high perceived risk and severity with regards to the disease [13]. Moreover individual's personal identity and traits of risk taking, sensation seeking or impulsivity and strong religious beliefs might overpower their social evolved response to exhibit conformity or compliance in pandemic situations. Moreover, individual differences in risk perception might explain the insignificant effect of illness-related emotions on other measures of conformity in our study.

Limitations

The findings of the present study need to be interpreted in light of several limitations of the study. India is a collectivistic culture and previous studies have shown that collectivist countries show higher levels of conformity as compared to individualistic cultures [10]. Therefore, the participants selected for the current study may already exhibit higher levels of conformity regardless of being assigned to experimental group or control group, which was not controlled for by pre-testing of conformity levels. Another variable that was not controlled for and might have affected conformity measures is age as previous studies have shown age differences in conformity with the level of conformity decreasing with age [14]. Furthermore, in the present study, a manipulation check (via a naive coder) was not done to see if the priming done was effective or not. Besides, due to the current pandemic and lockdown restrictions, the experiment had to be conducted online via Google forms instead of practically in a highly controlled laboratory setting or through verbal questioning as done in the previous study, thus making it less motivationally potent in arousing threat-relevant conditions. This method of arousing illness-related emotions and threats might have been less effective in priming in comparison to the way it was done in previous studies via a movie or a video clip showcasing the spread of an infection or disease. Lastly, one important limitation to be considered is that even though one

can be confident about the cause and effect relationship in the study given that the study was an experimental one, however the internal validity of the current study is questionable since the experiment could not be performed under standard laboratory settings due to lockdown restrictions.

Implications and Future Direction

Overall the findings of the current study imply that there is an impact of illness related anxiety/ fear on people's tendency to conform to the majority opinion. Previous studies have demonstrated the unique impact of illness related threats on psychological responses, particularly on social cognition [15]. The results of our study offer empirical evidence that disease threat has implications for attitudes and social influence. This tendency of people to display high levels of conformity with majority behaviour can be used in terms of setting the right kind of examples for the masses, by modelling appropriate behaviour's. That is, if community leaders, elders, religious leaders, who exert a lot of influence over the masses, model appropriate behaviour's and display them, the masses can follow and are more likely to adhere to such behaviours like social-distancing, following hygiene practices and willingness to follow other precautionary measures which affect the disease trajectory by slowing down the virus. The social psychological principle of conformity, induced in a pathogen threat situation can be used to promote desirable behaviours in the populations.

Another avenue for future research could be examination of the level of conformity in people in the ongoing pandemic and examination of the level of conformity in people after the pandemic to further corroborate the findings of this study. Besides, the current study needs to be carried out after the pandemic, in a neutral setting, where participants are not subconsciously primed to illness- related anxiety/ fear which can help us to assess the impact of the manipulation of illness-related emotions. In future studies, the effect of illness-related anxiety and fear on conformity can be assessed amongst a sample that is immuno-compromised in some way in contrast to inducing illness-related emotions which can give a deeper insight into the manifestation of certain instinctual behaviours of conformity in face of pathogen threat and arousal of illness related emotions.

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