

Research Article

EFFECT OF RISK PERCEPTIONS, FEAR AND MYTHS ABOUT COVID-19 INFECTION SUSCEPTIBILITY ON PROTECTIVE BEHAVIORS IN PAKISTAN

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Abstract

Adoption of protective behaviours is a significant intervention to deal with the current COVID-19 outbreak, even if we get a cure. This study aimed to investigate the effect of risk perceptions, fear and myths about COVID-19 infection susceptibility on protective behaviors in the Pakistani population. An online survey was conducted in Pakistan with a sample size of N=440. A questionnaire was administered in the Urdu language about people's perceptions of risk, fear, myths, and protective behaviors about COVID-19 infection. Results revealed that perceptions of risk about COVID-19 infection susceptibility had a significant positive effect on protective behaviours. Fear about COVID-19 was significantly correlated with protective behaviors but was not a significant predictor of protective behaviors. Myths about COVID-19 infection were not a significant correlate of protective behaviors. The present sample was found optimistically biased about the susceptibility for COVID-19 infection. Surprisingly, this study provided significant evidence about the adaptive nature of optimistic bias because optimistic estimates about COVID-19 infection susceptibility were significantly predicting protective behaviors. Further studies are suggested to investigate the adoptive nature of optimistic bias related to COVID-19 infection susceptibility. *ASEAN Journal of Psychiatry, Vol. 23(2) February, 2022; 1-8.*

Keywords: Risk Perceptions, COVID-19 Fear, Myths, Protective Behaviors

Introduction

Human world is facing the most critical time because of the emergence of COVID-19 (SARS-CoV-2). World Health organization (WHO) announced COVID-19 (SARS-CoV-2) a public health emergency on January 30, 2020. At the time of writing number of active cases of COVID-19 in the world are above 359 million and 5.62 deaths; and specifically in Pakistan, number of active cases are 1,386,348 and 29,137 deaths. COVID-19 (SARS-CoV-2) is a coronavirus disease originated by the severe acute respiratory syndrome coronavirus (Guan et al., 2020). Medical conditions include fever (44%-98%), cough (68%-76%), myalgia (18%), and fatigue (18%). The maximum-likelihood value of the Reproductive Number (RN) was 2.8.

Mortality rate was estimated at 1.4%-3.6%, but could be higher or lower depending upon factors. In Pakistan, mortality rate is around 1.4%. Children and young adults fight this infection well, with some complications. High risk population includes the patients with the older age and comorbidities like diabetes, cancer, hypertension, cardiovascular disease, and organ and coagulation dysfunction. COVID-19 as a pandemic has overwhelmed people physically and psychologically, and has induced strong behavioural and mental responses in both children and adults [1-3]. It is crucial to investigate these psychological and behavioural factors associated with the prevention and mitigation of COVID-19. Number of studies has reported that many psychological responses like loneliness, boredom, anger, stress, anxiety and

depression, which further initiate a behavioural response. These behavioural responses, for example in the form of protective behaviors play an important role to deal with this catastrophic pandemic.

Stimulus Cognition and Response (SCR) model suggests that a Stimuli (S) affects the state of mind of people through the cognition (C), which further initiates a psychological and behavioural Response (R). COVID-19 is a powerful stimulus which stimulates the fear and perceptions of high risk of COVID-19 infection susceptibility in people which further affect their behavioural responses like protective behaviour. Health belief model also endorses this notion that these perceptions are powerful enough to generate the behavioural responses in people. Studies have reported the relationship between the risk and threat perceptions and increased psychological and behavioural problems during the spread of Sever Acute Respiratory Syndrome (SARS) and Ebola [4,5]. A recent research has provided the evidence that perceived severity of COVID-19 outbreak was associated with problematic emotional and behavioural outcomes. Perceptions of risk and severity of COVID-19 also cause the irrational beliefs about the protectiveness. According to rational action theory, actions are rational in terms of what the person believes to be true, but the practice of that action may contain rational as well as irrational components. Irrational believes are the beliefs which are intolerant, illogical and false, but people use these beliefs defensively to comprehend events. Moreover, these believes are not supported by any empirical evidences, unconditional and always in contradiction with the reality. Many studies have reported that these irrational believe negatively affect the health behaviours. In context of predicting protective behaviors, fear and irrational beliefs/myths have a significant role [6-10]. Considering the importance of these factors, present study has objected to investigate the predicting effect of perceptions of risks, fear and myths about the COVID-19 infections on the protective behaviors of citizens of Pakistan. Main hypotheses of this study were:

1. Perceptions of risks and fear about the COVID-19 infections susceptibility will positively predict the protective behaviors.
2. Myths about the COVID-19 infections susceptibility will negatively predict the protective behaviors.

Methods

An online survey was conducted to collect the data. The sample was consisted of (N=440) people from different cities of Pakistan. A questionnaire was developed in Urdu language about public's perceptions of risk judgments, fear, myths and protective behaviors about COVID-19 infection. Participants were asked to rate two questions on discrete percentage scale (0% to 100%); one for absolute risk (*i.e* how much likely it is that you will get COVID-19 infection in coming weeks), and other for comparative risk (*i.e* how much likely it is that other will get COVID-19 infection in coming weeks) [11,12]. To measure fear about COVID-19 infection, two questions (*i.e* 'How much do you think COVID-19 has become a severe issue in Pakistan?' and 'How much are you afraid of COVID-19 infection?') were asked to rate. 6 Myths about COVID-19 infection were used to measure the believe of people on myths; and 5 protective behaviors were asked to rate. Study was approved by Psychology Research Ethic Committee (PREC) of Lahore Leads University, Pakistan under Ref. No. LLU-Psych/Fac 13.

Results

After collecting the data, data was analysed though number of statistical techniques like Pearson product moment correlation and multiple linear regression analysis in SPSS 24.v. Results showed that participants rated perceptions of risks about COVID-19 infection for one's self at average 11.86% and for others at average 26.86%, which represents that how much people are irrationally optimistic about COVID-19 infection susceptibility [14,15].

Pearson product moment correlation analysis revealed that perceptions of risks and fear about the COVID-19 infections susceptibility were

significantly and positively correlated with protective behaviors, but the myths were not significantly correlated. Results are presented in Table 1.

Tables 1 and 2 showed the results of the multiple linear regression analysis for the prediction of

protective behaviors by risk perceptions, fear and myths about COVID-19 infection. Results revealed that risk perceptions significantly and positively predicted the protective behaviors about COVID-19 infection.

Table 1. Pearson correlation among perceptions of risks, fear, myths and protective behaviors about the COVID-19 infection (N=440).

Variables	2	3	4
1. Protective behaviours	0.17***	0.12*	0.04
2. Risk perceptions		0.19***	-0.19***
3. Fear			-0.01
4. Myths			-

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

Table 2. Multiple linear regression analysis for the effect of perceptions of risks, fear, and myths about COVID-19 infection on protective behaviors (N=440).

Protective behaviours						
Predictors	B	SE	B	R2	F	p
Risk perceptions	0.17	0.05	0.17**	0.04	6.24	0.001
Fear	0.25	0.14	0.09			
Myths	0.07	0.05	0.07			

** : $p < 0.01$, ***: $p < 0.001$

Discussion

This study focused on the behavioural interventions of dealing with COVID-19 outbreak. This study objected to investigate the effects of risk perceptions, fear and myths about COVID-19 infection on protective behaviors. Results supported the first hypothesis of this study that increased people’s perceptions about risk of COVID-19 infection susceptibility cause the increase in protective behaviors. Previous studies have also reported that risk and threat perceptions cause an increase in psychological and behavioural problems during the spread of Sever Acute Respiratory Syndrome (SARS) and Ebola, which further influence the protective behaviors. Prediction coefficient of fear about COVID-19 was not strong enough to significantly predict the protective behaviors but the direction of prediction was as hypothesized. Myths about COVID-19 variable also were not

significant predictor of protective behaviors. It suggested that protective behavior has no direct influence by myths. This evidence was not supportive of the second hypothesis of this study. Which is not supported by the previous studies as well, like, Rabalais reported that irrational believes (*i.e* myths) has a significant influence on health behaviors [16].

Epidemiological perspective of COVID-19 pandemic suggested that collective adoption of health related protective behaviors *i.e* personal hygiene; social distancing by population can slow down the transmission of COVID-19. However, from a social and economic perspective, if population avoids the precautionary behaviors, dramatic side effects will happen in terms of shortage of food and pharmaceutical requirements. Individual’s risk perceptions about COVID-19 might affect the extent to which an individual will change his/her

behaviors [17,18]. Most of the people in making subjective risk estimates related to self about COVID-19 infection susceptibility tend to be optimistically biased, like reported in Asif et al. Studies showed that optimistic bias affects both absolute judgments *i.e* people underestimate the occurrence of harmful events to them, and comparative risk judgments *i.e* people think that they are less likely to experience harmful events than the others. Surprisingly, this study provided evidences supporting the notion that increase in subjective judgments of risks about COVID-19 infection susceptibility predicts the increase in protective behaviors. But there is need to count that in this subjective judgments/perceptions about COVID-19 infection susceptibility were calculated by adding the absolute and comparative risk judgments/perceptions about COVID-19 infection susceptibility [19-21].

Conclusion

This evidence by current study strengthened the assumption about positive effects of adaptive side of optimistic bias. Optimistic bias's adaptive side influences people in a way to get less stress and anxiety related to COVID-19 outbreak and performs protective behaviors. Further studies are required to support this assumption which is helpful to understand the nature of optimistic bias and its implications.

References

1. Asif M, Ghazal S, Kazim M, Idrees M, Zaheer UA. Optimistic bias about COVID-19 Infection susceptibility across demographics in Pakistan. *Journal of Research in Psychology*. 2020; 2(2): 19-23. [Crossref], [Google Scholar]
2. Baud D, Qi X, Nielsen-Saines K, Musso D, Pomar L, Favre G, et al. Real estimates of mortality following COVID-19 infection. *The Lancet Infectious Diseases*. 2020. [Crossref], [Google Scholar], [Indexed]
3. Bridges KR, Harnish RJ. Role of irrational beliefs in depression and anxiety: A review. *Health*. 2010; 2: 862. [Crossref], [Google Scholar]
4. Ellis A, David D, Lynn SJ. Rational and irrational beliefs: A historical and conceptual perspective. *Rational and Irrational Beliefs. Research Theory and Clinical Practice*. 2010; pp: 3-22. [Crossref], [Google Scholar]
5. <https://covid.gov.pk/>
6. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of coronavirus disease 2019 in China. *New England Journal of Medicine*. 2020; 382(18): 1708-1720. [Crossref], [Google Scholar]
7. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*. 2020; 395: 497-506. [Crossref], [Google Scholar], [Indexed]
8. Jaeger CC, Webler T, Rosa EA, Renn O. *Risk uncertainty and rational action*. Routledge. 2013.
9. Jernigan DB. Public health response to the coronavirus disease 2019 outbreak-United States, February 24, 2020. *MMWR. Morbidity and Mortality Weekly Report*. 2020; 69: 216-219. [Crossref], [Google Scholar]
10. Li JB, Yang A, Dou K, Wang LX, Zhang MC, Lin XQ, et al. Chinese public's knowledge, perceived severity and perceived controllability of the COVID-19 and their associations with emotional and behavioural reactions, social participation and precautionary behaviour: A national survey. *BMC Public Health*. 2020. [Crossref], [Google Scholar], [Indexed]
11. Lunn PD, Belton CA, Lavin C, McGowan FP, Timmons S, Robertson DA, et al. Using behavioral science to help fight the coronavirus. *Journal of Behavioural Public Administration*. 2020; 3(1). [Crossref], [Google Scholar], [Indexed]
12. Lv SH, Tian BC, Yang TZ. Analysis of the related behavioural influencing factors on the public health during SARS outbreak. *Modern Preventive*

- Medicine. 2008; 15. [Crossref], [Google Scholar].
13. Mehrabian A, Russell JA. An approach to environmental psychology. The MIT Press. 1974.
14. Raude J, Debin M, Souty C, Guerrisi C, Turbelin C, Falchi A, et al. Are people excessively pessimistic about the risk of coronavirus infection?. 2020. [Crossref], [Google Scholar].
15. Sharot T. The optimism bias. *Current Biology*. 2011; 21(23), 941-945. [Crossref], [Google Scholar]
16. Shepperd JA, Klein WM, Waters EA, Weinstein ND. Taking stock of unrealistic optimism. *Perspectives on Psychological Science*. 2013; 8(4): 395-411. [Crossref], [Google Scholar], [Indexed]
17. Varti AM, Oenema A, Schreck M, Uutela A, de Zwart O, Brug J, et al. SARS knowledge, perceptions, and behaviors: A comparison between Finns and the Dutch during the SARS outbreak in 2003. *International Journal of Behavioral Medicine*. 2009; 16: 41. [Crossref], [Google Scholar], [Indexed]
18. https://www.worldometers.info/coronavirus/?utm_campaign=homeAdvegas1?
19. Wu C, Chen X, Cai Y, Zhou X, Xu S, Huang H, et al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. *JAMA Internal Medicine*. 2020. [Crossref], [Google Scholar], [Indexed]
20. Yang T. *Health research: Social and behavioural theory and methods*. Beijing, China: People's Medical Publishing House. 2018; pp: 72-132.
21. Zhang S, Diao M, Yu W, Pei L, Lin Z, Chen D, et al. Estimation of the reproductive number of novel coronavirus (COVID-19) and the probable outbreak size on the diamond princess cruise ship: A data-driven analysis. *International Journal of Infectious Diseases*, 2020; 93: 201-204. [Crossref], [Google Scholar], [Indexed]

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