Optimistic Bias about COVID-19 Infection Susceptibility across Demographics in Pakistan

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ABSTRACT

Backgrounds
Optimistic bias in terms of risk estimates about COVID-19 infection susceptibility in Pakistani population is a threat which will cause horrifying results, just like Italy, France, and USA. We present estimates of perceived risk of COVID-19 infection susceptibility across demographics in Pakistani population.

Methods
In the last week of May, 2020, an online survey (N = 440) was conducted in Pakistan. A questionnaire was developed in Urdu language about people’s perceptions of risk judgments about COVID-19 infection susceptibility.

Findings
Estimate of perceived risk of COVID-19 infection for one’s self was lower than for the others. These irrationally optimistic estimates about COVID-19 infection susceptibility were consistent across gender, age levels, and education levels.

Conclusion
Results of this survey were consistent with the previous researches, representing that people are optimistically biased about the susceptible for COVID-19 infection. Further studies are needed to find out the cause of optimistic bias and its effects on actual protective behaviors.

INTRODUCTION

Current Coronavirus (COVID-19) outbreak has become a potentially catastrophic pandemic. It requires aggressive measures from governments, businesses/industries, and general public to reduce its infection spread. COVID-19 infection spread can be reduced through minimizing the physical contact with other people i.e. social distancing and maximizing focus on hygiene and activities that represent healthy lifestyles. Independent of government’s strict actions, the productivity of these regulations highly depends upon general public’s compliance.

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%) (Guan et al., 2020; Huang et al., 2020). The maximum-likelihood value of the reproductive number (R0) was 2.8 (Zhang et al., 2020). Mortality rate was estimated at 1.4%-3.6% (Guan et al., 2020; Huang et al., 2020), but could be higher or lower depending upon factors (Baud
et al., 2020). 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 (Wu et al., 2020).

Epidemiological perspective of this outbreak of COVID-19 suggest that collective adoption of health related protective behaviors i.e. personal hygiene, social distancing by population can slow down the transmission of COVID-19 (Jernigan, 2020). 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 (Raude et al., 2020).

Individual's risk estimates about COVID-19 might affect the extent to which an individual will change his/her behaviors. Most of the people in making subjective risk estimates related to self about COVID-19 infection susceptibility tend be optimistically biased. Studies showed that optimistic bias effects 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 (Sharot, 2011; Shepperd et al., 2013).

Dark side of optimistic bias is that it tend to affect peoples’ judgments about COVID-19 infection susceptibility and people stop or minimize taking precautionary measures. In this study, descriptive statistics of perceived risk judgments about COVID-19 infection across different demographic factors were calculated.

**METHODS**

An online survey through Qualtrics was conducted in last week of may, 2020, to investigate descriptive statistics of risk judgments about COVID-19 infection in Pakistan. Sample was consisted of (N = 440) citizens from different cities of Pakistan. A questionnaire was developed in Urdu language about public’s perceptions of risk judgments 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). Study was approved by Psychology Research Ethic Committee (PREC) of Lahore Leads University, Pakistan under Ref. No. LLU- Psych/Fac 13.

**RESULTS AND DISCUSSIONS**

Results showed that participants rated perceived risk judgments of 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.
Figure 1. Perceived risk judgments about COVID-19 infection across gender (% of respondents).

Figure 2. Perceived risk judgments about COVID-19 infection across age levels (% of respondents).
Perceived risk judgments of COVID-19 infection for one’s self and others across demographics (Figure 1 to Figure 3) representing that people in every class are optimistically biased to some extent. Consistent with the previous researches (Cho et al., 2013; Rudisill, 2013), results of this study are representing that people are estimating risk of COVID-19 infection in an optimistically skewed manner. One the one hand, perceived risk judgments of infection for oneself and others were considerably lower than expert rough estimate. But on the other hand, the comparison between risk judgments of COVID-19 infection for one’s self and others were significant (p < .001). This significant difference represents that people are optimistically biased. This cognitive bias i.e. optimistic bias could be a result of the ease and/or necessity of reducing social distancing and hygiene guidelines (Kuper-Smith et al., 2020).

Optimistic bias can be seen in two perspectives; adaptive and maladaptive. Optimistic bias might be adaptive in terms that people get less stress and anxiety related to COVID-19 outbreak and perform precautionary behaviors to some extent. But maladaptively, optimistic biased people are highly likely to spread infection in people around them, because they think that they are less likely to get infection and that will not affect other people. These biased people have high probability that they do not perform precautionary i.e. social distancing in an efficient way, which indirectly become a factor of spreading infection rapidly.

Optimistic bias toward COVID-19 infection in Pakistani population is a threat which will cause horrifying results, just like Italy, France, and USA (Kuper-Smith et al., 2020; Rudisill, 2013). But risk estimates of people about infection may change in coming
weeks. We plan to find out the potential factors of optimistic bias and actual precautionary behavior performance. This will provide us the better understanding about the relationship of biases and actual behavior.

CONCLUSION

People were found optimistically biased about the susceptibility of COVID-19 infection across gender, age levels, education levels, family income, and residential area. Irrationally optimistic estimates of people make them more vulnerable to get COVID-19 infection indirectly, because they reduce performing protective measures.

Reference: