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Research Paper

Correlates of Compliance With COVID-19 Prevention Guidelines: Risk Propensity, Locus of Control, Intolerance of Uncertainty

Radhika Kothari[1]*

ABSTRACT

As the world faces the threat of the coronavirus pandemic it is imperative that people comply with the prevention guidelines provided by the experts. Despite the prevention guidelines in place, the compliance rates among individuals differ. In order to improve voluntary compliance with the COVID-19 prevention guidelines, it is important to examine the personality attributes owing to the individual differences in compliance rates. The objective of this study is to explore the relationship between Compliance with COVID-19 prevention guidelines and Risk Propensity, Locus of Control, and Intolerance of Uncertainty respectively. The study employed a survey method wherein standardized questionnaires were administered to participants from different cities of India. The results indicate that there exists a significant negative correlation between Risk Propensity, External Locus of Control and, Intolerance of Uncertainty and Compliance with COVID-19 prevention guidelines. The results also demonstrate a significant positive correlation between Internal Locus of Control and Compliance with COVID-19 prevention guidelines. The findings suggest the importance of a plurality of messages in communication by the experts and officials. Theoretical and quantitative findings are elaborated in detail.

Keywords: *Risk Propensity, Locus of Control, Intolerance of Uncertainty, Compliance, COVID-19*

The World Health Organization (WHO) describes Coronavirus disease (COVID-19) as an infectious disease caused by a newly discovered coronavirus that spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes and it has turned into a global pandemic. To protect oneself and others from infection and to slow the transmission of COVID-19, the WHO has suggested specific protective and preventive guidelines for the public (WHO, n.d.). Various National and International institutions also have put in place protective and preventive guidelines to curb the spreading of the virus. In spite of this, there have been numerous reported cases of people disregarding these instructions all over the world (Bhanot, 2020), likely worsening the problem.

[1]Independent Author, Mumbai, Maharashtra, India
*Corresponding Author

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This indicates that there have been differences in the levels of compliance with the prevention guidelines among individuals. It is important to understand that while most people comply with these guidelines some people comply relatively more than others. The current study, thus, aims to understand factors relating to the differences in the individual rates of compliance with COVID-19 prevention guidelines.

Various studies have pointed out the demographic correlates of engagement in protective and preventive health behavior during a pandemic. As evinced in the meta-analysis, the results of many studies have found the influence of gender on preventive and avoidant behavior in response to epidemics and pandemics, and consistently pointed out that women are more likely to carry them out compared to men (Moran & Del Valle, 2016). According to a review for age, studies have generally shown that older people are more likely to carry out protective behaviors during a pandemic (Bish & Susan, 2010).

People differ in their ways of dealing with risks (Lion et al., 2002). One study found that low compliance with preventive guidelines was strongly related to risk attitudes and particularly demonstrated that the decline in average compliance levels over the period was more pronounced among individuals with risk-seeking attitudes (Wright & Fancourt, 2020).
As per Rotter (1966), locus of control refers to the degree to which individuals are likely to attribute personal control to reward in the same situation. When a reinforcement or event is perceived by someone as following some action of their own but not being entirely contingent upon their action or in other words perceived as the result of luck, chance or fate it is termed as external control. If an event is perceived by a person as being contingent upon their own behavior or their own relatively permanent characteristics it is termed as internal control.

A study found the effect of locus of control on adherence among individuals in relation to their health-related behaviors. Internally-oriented individuals were found to adhere more to their treatment regimen, seek or search for health-related information, see themselves as responsible for maintenance or improvement of their physical health, know more about conditions that cause poor health, and are more likely to take steps to improve or maintain their health than externally-oriented individuals (Omeje & Nebo, 2011).

Intolerance of uncertainty can be referred to as a concept representing cognitive, emotional and behavioral reactions to uncertainty in daily life circumstances (Freeston et al., 1994). There can be individual differences in intolerance of uncertainty. Intolerance of uncertainty is defined as "the excessive tendency of an individual to consider unacceptable that a negative event may occur, however small the probability of its occurrence" (Dugas et al., 2001). A recent study has indicated that intolerance of uncertainty might be a significant factor related to the radical changes in one's routine during the pandemic (Satici et al., 2020). This demonstrates the important role it plays in lockdown compliance among individuals and public reaction to the coronavirus crisis.

These findings have however not been studied in the Indian context. With the resurgence of COVID-19 cases in the country and around the world (WHO, n.d.), it is imperative to study the factors and individual differences which relate to compliance behavior. Thus the current study is undertaken to study individual factors such as risk propensity, locus of control, and intolerance of uncertainty as correlates of compliance with COVID-19 guidelines among youth in India.

Research Question

- Whether there exists a significant relationship between Compliance with COVID-19 prevention guidelines and Risk Propensity, Locus of Control and Intolerance of Uncertainty respectively.

METHODOLOGY

Sample

A random sample of 201 participants (115 Females, 86 Males) in the age range of 18-25 years (M=20.4, SD=1.6) from many Indian cities participated in the study. Eligibility was restricted to English Speakers since all the surveys administered were in English. Participation in the study was entirely voluntary and participants were given the freedom to quit the study at any point if they wished.

Instruments

A survey methodology was employed for data collection. Standardized psychometric tools were used to create the survey form.

Procedure

Google forms were used in order to administer the survey form. Instructions were clearly specified in the survey; confidentiality and privacy of data were assured and ensured for all the participants. Participants were debriefed at the end of the survey.

Scales

- **Risk Propensity Scale (RPS)**: The Risk Propensity Scale (Meertens & Lion, 2008) was used to measure the general tendency to take risks. The scale uses a 9-point rating scale ranging from 1 (totally disagree) to 9 (totally agree). Higher scores on the RPS indicate higher risk-seeking tendencies. Examples of items include, "I really dislike not knowing what is going to happen", and "I take risks regularly". The scale has Cronbach's alpha .77
- **IE-4 Short scale for assessing locus of control**: The IE-4 Internal External Locus of control scale (Kovaleva, 2012) was used to measure locus of control. The scale consists of 4 items measured on a five-point Likert scale (1= "Doesn't apply at all" to 5 "Applies completely"). The scale is subdivided into the internal locus of control and external locus of control scale with two items in each subscale. Examples of items are, "If I work hard, I will succeed", and "Fate often gets in the way of my plans". The scale is validated for use by Kovaleva (2012).
- **IUS-12 (Intolerance of Uncertainty Scale, Short Version)**: Intolerance of Uncertainty was measured using the short version of the IUS-12 (Intolerance of Uncertainty Scale) adapted by Carleton et al., (2007). The scale consists of 12 items scored on a 5-point Likert scale (1 = "Not at all characteristic of me", 5 = "Entirely characteristic of me"). Examples of the items are: "Unforeseen events upset me greatly", "It frustrates me not having all the information I need", and "Uncertainty keeps me from living a full life". The internal consistency of this scale is excellent (α =0.92).
- **Compliance with COVID-19 Prevention Guidelines Scale**: Compliance with COVID-19 prevention guidelines was measured using the Compliance with COVID-19 prevention guidelines scale (Plohl & Musil, 2020). The scale consists of 11 items measured on a 4-point scale (1= "Not at all" to 4= "To a great extent"). Example of

items include, "Frequently washing your hands with soap and water for at least 20 seconds", and "Maintaining at least 1 metre (3 feet) distance between yourself and others". The internal consistency of the scale is good (α=.76).

RESULTS

The current study examined the relationship between Compliance with COVID-19 prevention guidelines and other variables (Risk Propensity, Locus of Control, and Intolerance of uncertainty) in a sample of participants who were in the age range 18-25 in some of the major cities of India.

With respect to the research question addressed, the study found that there exists a significant negative correlation between compliance with COVID-19 prevention guidelines and risk propensity, external locus of control, and intolerance of uncertainty. The current study found a significant positive correlation between compliance with COVID-19 prevention guidelines and internal locus of control.

Table 1 indicates a significant negative correlation between compliance with COVID-19 prevention guidelines and risk propensity (r_s = -.30, p <0.01), between compliance with COVID-19 prevention guidelines and intolerance of uncertainty (r_s= -.14, p< 0.05) and also between compliance with COVID-19 prevention guidelines and external locus of control (r_s = -.21, p < 0.01). It also demonstrates a significant positive correlation between compliance with COVID-19 prevention guidelines and internal locus of control r_s=.20, p <0.01)

Table 1: Correlation between compliance with COVID-19 prevention guidelines and risk propensity, intolerance of uncertainty, internal locus of control, and external locus of control

Variable	Compliance with COVID-19 prevention guidelines	Significance
Risk Propensity	-.30	0.01
Intolerance of Uncertainty	-.14	0.05
Internal Locus of Control	.20	0.01
External Locus of Control	-.21	0.01

DISCUSSION

The current study explored the impact of different variables (risk propensity, locus of control, and intolerance of uncertainty) on compliance with COVID-19 prevention guidelines in Indian youth in the age range of 18-25 years. The study found a significant relationship between compliance with COVID-19 prevention guidelines and the variables.

The results demonstrate a significant negative correlation between compliance with COVID-19 prevention guidelines and Risk Propensity. This suggests that individuals with higher risk propensity are less likely to comply with COVID-19 prevention guidelines as compared to individuals with low risk propensity who are more likely to comply with them.

The results of the current study are justified by the findings of the study (Chan et al., 2020) which found that risk-seeking regions were less responsive to protective measures during the pandemic. Additionally, it was suggested that risk-takers seem to demonstrate a lower preference for their own and communal safety as compared to risk-averse regions where people are more actively increasing social isolation by staying at home. The study also pointed out that risk-loving regions are less likely to adjust their behavior based on external stimuli like the WHO declaring COVID-19 as a pandemic.

Furthermore, a recent study by Miguel et al., (2020) evinced that higher levels of risk-taking are directly associated with lower compliance with containment measures. Moreover, the study pointed out that this trait describes, at least partially, the reason why some individuals continue not adhering to the containment measures even with increasing numbers of cases. These findings help corroborate the findings of the current study.

The results of the current study demonstrate a significant negative correlation between compliance with COVID-19 prevention guidelines and external locus of control and a significant positive correlation with internal locus of control. This implies that individuals with a high external locus of control are less likely to comply with COVID-19 prevention guidelines compared to those with a low external locus of control. The results further signify that individuals with a high internal locus of control are more likely to comply with them as compared to individuals with a low internal locus of control.

Having a high internal locus of control has been evinced as being positively related to engaging in health-enhancing behaviors, whereas a high external locus of control has been associated with diminished participation in such actions (Steptoe & Wardle, 2001). The findings of this study help explain the findings of the current study which found a negative correlation between compliance with COVID-19 prevention guidelines and external locus of control and a positive correlation with internal locus of control.

The results of the current study found a significant negative low correlation between compliance with COVID-19 prevention guidelines and intolerance of uncertainty. The low correlation can be explicated through the findings of a study by Maftei and Holman (2020) which also found a limited association between lockdown compliance and intolerance of uncertainty and further indicated that the association might be weaker than expected when controlling for other variables. The low levels of correlation can also be understood by observing the findings of a recent study (Farias & Pilati, 2021) where intolerance of uncertainty did not significantly predict non-compliance with social distancing.

Limitations and Future Recommendations

A limitation of the study was that Google forms were used to collect the data. This limits the data collection to only those respondents who have access to the internet. The sample was restricted to urban, English-speaking individuals and those not familiar with English could not be surveyed. Moreover, the study did not differentiate between participants who were already infected with COVID-19 or had someone close to them being infected by it and those who did not. The sample of the current study was small and future studies can be conducted on a larger sample.

Future research endeavors could examine whether the same relation exists between these variables and compliance behaviors when differentiating participants on the basis of those

who were infected with COVID-19 or had someone close to them being infected by it and those who did not. Additionally, future research investigations can examine other personality variables such as self-discipline, tendency to experience guilt, and agreeableness to see its impact on compliance. Future studies can be conducted to understand the impact of Indian cultural norms on these variables.

Application of the Study

The results of the study show that compliance levels vary with differing levels of individual attributes. The findings demonstrate the importance of implementing an approach that involves a plurality of messages in public health-related communication by experts and officials to maximize broad adherence. The findings of the study imply that all individuals may not be equally responsive to a specific type of communication. Hence, in seeking to maximize compliance considering these individual differences, an approach involving a plurality of communication will likely be most effective.

CONCLUSION

The findings of the current study demonstrate that there are differences in the rate of compliance with COVID-19 prevention guidelines among individuals owing to their individual differences in personal variables such as their risk propensity, locus of control and intolerance of uncertainty.

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Conflict of Interest
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