

Personality Traits, Risk Perception, and Protective Behaviors during the COVID-19 pandemic

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Research Article

Keywords: Personality, COVID-19, risk perception, personal hygiene, social distancing

Posted Date: May 19th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-29379/v1>

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Abstract

During the 2020 COVID-19 pandemic, people were instructed by health authorities to adopt protective behaviors to avoid infection. One of these behaviors is social distancing, which is influenced by diverse variables. Using data from an online survey with 405 responses, this study performed a multiple regression analysis to explore the effects of personality, risk perception, and personal hygiene practices on social distancing among residents of Qatar. The results showed that conscientiousness, neuroticism, risk perception, and personal hygiene practices predicted social distancing with a moderate effect size. Gender differences were also found in social distancing practices that women reported higher in social distancing practices than men. These results highlighted the importance of these factors in predicting individuals' protective behaviors during the COVID-19 pandemic.

Introduction

Since the dawn of history, humans have experienced several waves of pandemic diseases that caused hundreds of millions of deaths. Examples include influenza pandemics (Gagnon, Acosta, Madrenas, & Miller, 2015) and the HIV-AIDS pandemic (Merson, 2006). At the time of this study in 2020, humanity is dealing with the COVID-19 pandemic (WHO, 2020) which has to this date killed around 150,000 people. During a pandemic, most of individuals uphold protective practices and take precautionary actions such as social distancing to avoid contagion (Ibuka, Chapman, Meyers, Li, & Galvani, 2010; Brug, Aro, & Richardus, 2009). However, some individuals do not take such behavior seriously, endangering their own lives and those of others (Kamate et al., 2010; Van, McLaws, Crimmins, MacIntyre, & Seale, 2010).

One of the variables that predict the types of action people employ is personality type. Existing studies have attested to the association between personality type and various kinds of behaviors. For instance, Boone, De Brabander, and Van Witteloostuijn (1999) demonstrated that personality has a substantial impact on cooperative behavior, such as following group rules and helping group members (Tyler & Blader, 2001). Salgado (2002) showed that the big five personality traits predict deviant behavior, such as violating institutional rules.

Personality traits are also associated with health behavior. For example, individuals who score high on neuroticism are often worried about their health (Van Dijk et al., 2016) and therefore more likely to maintain good health habits such as oral hygiene (Shanker, Mohamed, Hegde, & Kumar, 2013; Meshram, Gattani, Shewale, & Bodele, 2017). Mortensen, Becker, Ackerman, Neuberg, and Kenrick (2010) revealed that individuals who score low on agreeableness, extraversion, and openness to experience are more inclined to avoid infectious diseases. Bogg and Roberts (2004) reported that conscientiousness is linked to healthy behaviors, such as avoidance of risky sexual behavior and substance abuse.

In the context of a pandemic, people engage in behavioral practices to protect themselves from infection; these include behaviors such as social distancing and increased personal hygiene practices (Reluga, 2010; Cowling et al., 2010). Social distancing refers to practices implemented by individuals to avoid

contagion (Caley, Philp, & McCracken, 2008), such as reducing contact frequency with others (Reluga, 2010), keeping adequate space between themselves and others when communicating face to face (Morrison, & Yardley, 2009), staying at home for extended periods, and avoiding crowds (Glass, Glass, Beyeler, & Min, 2006). Some studies found that voluntarily adopting social distancing is related to personality traits. For example, Jones and Salathe (2009) demonstrated that anxiety could predict engaging in protective behavior, such as avoiding crowded places.

Several studies also found gender differences in the precautionary behaviors to avoid infection. For example, women are more likely to endorse social distancing and maintain personal hygiene practices than men (Park, Cheong, Son, Kim, & Ha, 2010; Liao Cowling, Lam, Ng, & Fielding, 2010). Moran and Del Valle (2016) demonstrated that—compared with men—women are more likely avoid crowds and physical contact with others to avoid respiratory pandemic diseases.

The implementation of health protective behavior such as social distancing is also related to risk perception (Caley et al., 2009; Poletti, Ajelli, & Merler, 2012; Pistone et al., 2007), which is defined as one's assessments of hazardous objects or activities (Slovic, Fischhoff, & Lichtenstein, 1982). Leppin and Aro (2009) demonstrated that in the context of the respiratory pandemic disease, such as an influenza pandemic, risk perception is associated with protective behaviors such as frequent hand washing and avoidance of hand shaking.

In Arab culture, people do not recognize—and may have never experienced—social distancing; this is due to the collectivistic characteristics of Arab societies (Mourad & Abdella Carolan, 2010). Therefore, we ask the following questions: in the context of a respiratory disease pandemic such as COVID-19, to what extent do Arabs practice social distancing? What are the predictors of social distancing to avoid COVID-19 infection in an Arab society? Are there gender differences in social distancing?

Referring to the above, this study aims to investigate the impact of personality traits, risk perception, and personal hygiene practices on social distancing to avoid COVID-19 infection.

Methods

Participants

Data were collected online by a snowball sampling method and the target population was residents of Qatar. Respondents were asked to complete an online questionnaire that was distributed to mobile phones of individuals connected on PI social networks. The targeted subjects were also encouraged to distribute the questionnaire to their contacts who reside in Qatar.

Approval for this study was obtained from the author's relevant institutional review board and respondents were asked to read a description of the study and provide written informed consent prior to completing the survey.

The final sample included 405 participants, of which 56.2% of were women. Respondents were aged from 18 to 69 years ($M_{age} = 38.51$, $SD = \pm 10.53$). Considering their level of education, 83% of respondents had a college degree and higher.

Measures

Big five personality traits. A 10-item short version of the Big Five Inventory (BFI-10) developed by Rammstedt and John (2007) were used. The items were translated from English to Arabic by the author and back-translated by professional translator to check accuracy and internal consistency. This scale includes two items for each dimension and the items measured were openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. The questionnaire items included questions such as “I see myself as someone who is: reserved, generally trusting” Participants were asked to report their level of agreement on a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Social distancing. This factor was assessed with three addressed social distancing practices (Cronbach $\alpha = .69$); the items were “I stay at home and don’t go outside unless necessary, I keep adequate distance when I communicate with others, and I don’t allow relatives and friends to visit me at home.” Each item was rated on a 5-point Likert scale ranging from 1 = never to 5 = always.

Personal hygiene practices. A single item was used as a personal hygiene practices measure. The item was “I keep personal hygiene practices and handwashing.” Participants rated their agreement or disagreement on a 5-point Likert scale.

Risk perception. A single item was used to assess to what extent an individual perceives COVID-19 as a dangerous disease. The item was “how do you rate the danger of COVID-19 disease?” Respondents assessed their responses on a scale ranging from 1 = not dangerous at all to 5 = very dangerous.

Results

The descriptive statistics show that 87.3% of the participants reported that they prefer to stay at home and to not go outside unless necessary, 60.3% said that they maintain an adequate distance when communicating with others, 68.6% reported that they do not allow relatives and friends to visit them at home, and 73.5% believed that COVID-19 is a dangerous disease. Moreover, 95.8% reported that they embrace personal hygiene practices and washing hands.

Table 1 shows the results of the Pearson’s correlation coefficient, which indicates that there is a significantly positive correlation between social distancing and both conscientiousness ($r = .27$; $p < .001$) and neuroticism ($r = .18$; $p < .001$), while there is a significant negative correlation between social distancing and agreeableness ($r = -.11$; $p = .025$). Additionally, risk perception ($r = .25$; $p < .001$) and personal hygiene practices ($r = .48$; $p < .001$) are both positively correlated with social distancing.

Table 2 illustrates the results of the multiple linear regression analysis, which indicate that there is a collective significant effect between conscientiousness, neuroticism, risk perception, personal hygiene practices, and social distancing practices. The model explains 29.2% of the variance ($F_{[7, 391]} = 23.01; p < .001; R^2 = .292; d = .41$). The individual predictors were examined further and these indicated that conscientiousness ($b = .112; SE = .011; p = .023$), neuroticism ($b = .111; SE = .010; p = .018$), risk perception ($b = .145; SE = .035; p = .001$), and personal hygiene practices ($b = .451; SE = .044; p < .001$) were significant predictors in the model.

Table 3 shows the gender differences in social distance practices. These results indicate that women ($M = 4.01; SD = \pm .818$) are more likely to utilize social distancing ($t_{[398]} = -2.08; p = .040; d = -.21$) than men ($M = 3.85, SD = \pm .75$).

Discussion

Within the context of a pandemic such as COVID-19, individuals' reactions range from carelessness to actively taking precautionary measures to avoid infection. This study aimed to ascertain the main determinants of social distancing adopted by Arab residents in Qatar to avoid infection with the pandemic disease COVID-19.

Referring particularly to the association between personality traits and social distancing, the results show that agreeableness is negatively associated with social distancing, which indicates that individuals who are more sociable and prefer to participate in social events—such as volunteering activities and social interactions—are less likely to practice social distancing to avoid infectious disease. This behavior may increase their likelihood of being infected with COVID-19. Furthermore, conscientiousness and neuroticism were shown to be positively associated with adopting social distancing to avoid COVID-19 infection. This means that individuals who are more inclined to comply with social norms and those who develop anxious and fearful feelings tend to practice social distancing.

In their study, Cowling et al. (2010) reported that high levels of anxiety are associated with lower rates of personal hygiene practices (handwashing) and higher levels of social distancing to avoid H1N1 contagion. Moreover, Trobst, Herbst, Masters, and Costa Jr (2002) found that individuals who score high on neuroticism tend to adopt risky sexual practices. The inconsistency in the behavior of people prone to neuroticism when dealing with a pandemic disease may be associated with their level of neuroticism. For example, individuals with high levels of fear and anxiety tend to adopt denial as a psychological defense mechanism to mitigate their fears; this means that they practice risky behaviors to feel psychologically secure (Florian & Mikulincer, 1997; Aronson, 2008; Peek, Sayad, & Markwardt, 2008).

In addition to the findings on personality traits, the results show that risk perception predicts social distancing. Hence, individuals who consider the pandemic disease (COVID-19) to be a serious danger are more inclined to adopt social distancing practices to avoid infection. These results corroborate those of

previous studies (e.g., Brug et. al., 2009; Ibuka et. al., 2010; Walter, Böhmer, Reiter, Krause, & Wichmann, 2012). Furthermore, when an individual perceives a health risk factor, they react to the risk by attempting to find solutions to avoid it. These solutions represent avoidance behavior that is adopted to survive an infectious disease. Our results also show that women are more likely to practice social distancing than men; these results coincide with those of prior studies (e.g., Liao et. al., 2010; Park et. al., 2010; Moran & Del Valle, 2016).

The participants who declared that they maintain good personal hygiene practices were shown to be more likely to adopt social distancing. This variable is the most powerful predictor of social distancing practices. It could be inferred that an individual's personal perception of being clean motivates them to reinforce such behavior by adopting further actions, such as social distancing. Moreover, individuals who practice good personal hygiene practices might perceive others as "less clean" or more contaminated, which, in turn, increases the probability of being infected; therefore, they embrace more protective behavior such as social distancing.

The findings of this study provides a better understanding of individuals' responses to the pandemic based on personality traits and illustrates the importance of both risk perception and personal hygiene practices. Moreover, based on the findings concerning gender differences in the precautionary behaviors to avoid contagion (social distancing), our findings would be useful to encourage media platforms to focus on presenting persuasive messages focused on men in the media, as they are less likely to adopt protective behaviors.

Our study has two limitations. First, the respondents were residents of Qatar of different Arab nationalities; therefore, their precautionary behavior (social distancing) may be affected by the culture of their home country. Second, the sample may not be representative of all nationalities in Qatar, particularly individuals of non-Arab nationalities working in Qatar, such as Indians, Filipinos, and Pakistanis; therefore, caution should be used when generalizing the results.

The current study sheds light on the factors that could predict the adoption of precautionary behaviors (social distancing) to avoid infection during the COVID-19 pandemic. The main predictors are personality traits, risk perception, and personal hygiene practices. We suggest further research on the role of the neuroticism personality trait on predicting social distancing behavior, as there were inconsistent findings of how individuals with the neurotic personality trait behave in response to the pandemic. Further research is also recommended to investigate the impact of personal hygiene practices on social distancing from an interpersonal contact perspective.

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Tables

Table 1

Means, standard deviations, and correlations

Table 3

Gender differences in social distancing

Social distancing					
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i> *
Male	176	3.85	.82	-2.06	.040
Female	224	4.02	.75		

**p* < .05

Declarations

The author has no conflicts of interest to declare.