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After the Pandemic: Do Personality Traits Affect Students' Behaviour Toward Following the Instructions for Prevention of COVID-19?

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Abstract

In their lives, individuals face many disasters and events that involve many sources of anxiety, risk factors, and threats in all areas of life. The effects of these stressful situations may be reflected in most aspects of the individual's personality. To achieve a good level of safety and mental health, the individual needs to deal with these disasters in ways that are commensurate with the instructions for dealing with such disasters issued by global and local health organisations. It is assumed that the extent of adherence to instructions during disasters is affected by this personality trait. This study aimed to verify the predictive ability of the personality traits to deal with the instructions for commitment to dealing with the COVID-19 pandemic among university students in Jordan. It also aimed to find out the differences in adherence to instructions according to gender. The study sample consisted of 366 Jordanian university students who were randomly selected, and the descriptive approach were applied. The results indicated that there were no statistically significant differences due to gender in adherence to the instructions for dealing with the COVID-19 pandemic. The results also indicated that personality traits (agreeableness, conscientiousness, openness, and extroversion) predict the extent of adherence to the instructions announced by the Ministry of Health in Jordan, and the most predictive personality type was conscientiousness, while neuroticism did not significantly predict adherence to instructions.

Keywords: Big Five Factors, pandemics, personality, personality Traits, COVID-19

Introduction

Corona disease has become an urgent and important threat since cases of pneumonia of unknown cause were reported in Wuhan, China, in December 2019, and it has continued to spread to this day. On 30

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January 2020, the World Health Organization (WHO) declared an outbreak of a public health emergency of international concern. Many countries in the world have since faced serious health crises (Huang et al., 2020).

The main psychological impact of the spread of COVID-19 infection is high rates of stress, anxiety, depression, and frustration (Holmes et al., 2020), loneliness, depression, alcohol and drug abuse, and suicide, and these problems are due to fears of illness, quarantine and physical distancing (Moreno et al., 2020). The spread of COVID-19 also causes psychological and physical problems and various types of psychological stress (Wang et al., 2020).

Stresses are related to daily life events. We are all exposed daily to a variety of external stresses, including health stresses (Ibrahim, 1994). Lazarus (1966) indicated that personality traits affect the individual's abilities to withstand and confront sources of stress in a direct way through the individual's effective coping processes. People have different personal characteristics that affect how they respond to stress. These characteristics make them special individuals. These characteristics can be described as a set of psychological traits and mechanisms organised within the individual himself. They are relatively continuous and affect the individual's interactions and adaptations to himself and his environment in different situations (Deniz & Satici, 2017).

Following the instructions of health organizations are related to personal traits, so the variation in the levels of commitment is related to the variation in personal traits, as some individuals are more committed than others. For example, Chen et al. (2021) found that the proactive personality is more committed to protective care, while Diaz and Cova (2022) found that those with disgust sensitivity are more committed while those with a psychological reactance are less committed. Accordingly, there are few studies that look at the relationship between personality traits, specifically the Big Five Personality Factors, and the extent to which COVID-19 instructions are followed, and this is what the current study seeks to reveal.

Theoretical Background

Personality plays an important role in the interactions of individuals. Eysenck defined it as the total of people's actual behaviour patterns, which develop through the interaction between intelligence, mood, formation and morals, while Alport defined it as the dynamic organisation of psychological systems in the individual that determines his behaviour, thinking and adaptation to the environment (Hall & Lindzey, 1970). Wade and Tavris (1993) define it as the fixed and distinctive pattern of behaviour, thoughts, motives and emotions that characterise the individual, while Santrock (2011) views it as the

thoughts, emotions and behaviours that characterise the individual's way of adapting to the surrounding world.

Many personality psychologists agree that personality consists of a hierarchical system that assumes that there are five major and global factors of personality known as the Big Five Personality Factors and symbolised by many personality psychologists agree that personality consists of a hierarchical system that assumes that there are five major and global factors of personality known as the 'Big Five Personality Factors' and symbolised by the 'Ocean'. These factors are openness to experience, conscientiousness, extraversion, openness and neuroticism (Costa & McCrae, 1992). This model has spread around the world due to the work of personality psychologists such as Cattel, Goldberg, Austin, and Costa (De Raad, 2000). The model of the Big Five personality factors, developed by Costa and McCrae (1985), is one of the most important models that explain human personality traits at the present time. It is the most widespread personality model (Rosellini & Brown, 2011).

Individuals who are open to experience enjoy social communication, the ability to express themselves, and possess enthusiasm and excitement, while individuals who are closed tend to think within a narrow range of intellectual and creative interests (Soto, 2018). They pay less attention to art. The distinguishing features of these individuals are determined by: imagination, aesthetics, feelings, actions, thoughts and values (Aschwanden et al., 2020).

People with a high level of conscientiousness are characterised by organisation, perseverance, delay in gratification, accuracy, responsibility and perseverance, while individuals with low conscientiousness tend to be less anxious, less focused, and more likely to disconnect from tasks and not complete them (Nighute & Sadawarte, 2014).

McCrae and Costa (1997) mentioned that individuals with a high degree of extraversion have the ability to interact with others, have positive emotions, have successful social relationships and are energetic, self-confident and assertive. While the low degree of extraversion indicates calm and a lack of participation, these individuals have the following characteristics: warmth, affection, sociability, assertiveness, activity, a preference for excitement and positive emotions (Mund & Neyer, 2018).

Individuals with a high level of agreeableness have positive feelings toward others, such as compassion, tolerance, kindness, trust and unselfishness, whereas those with a low level of agreeableness are aggressive and unwilling to cooperate. The distinguishing features of these individuals are determined by trust, integrity, altruism, submission, humility and moderation of opinion (McCrae & Costa, 1997).

Neurotic people have low levels of life satisfaction, job satisfaction and relationship satisfaction; they are highly susceptible to anxiety and mood disorders (Soto, 2018), while a low score on the neuroticism scale indicates that individuals are characterised by emotional stability, are more flexible, and are less prone to grief and insecurity. The distinguishing features of these individuals are: anxiety, anger, depression, impulsivity and intolerance to stress (Aschwanden et al., 2020; Khosravi, 2020).

Personality traits affect many aspects of life. Ahmed (2009) indicated that there is a correlation between personality factors and lifestyle; Ibrahim (1994) indicated that there is a positive correlation between strategies for dealing with stress and neuroticism; Gunthert and Cohen (1999) concluded that high-neurostic people perceive stress more than low-neurostic people, and they indicated a positive correlation between neuroticism and coping methods (self-blame, wishful thinking, emotional release and aggressiveness). While there was no statistically significant correlation between neuroticism and coping methods (relaxation, orientation to other situations, re-planning, direct action, orientation to social support, humour and information search), Mund and Neyer (2018) indicated a positive correlation between loneliness and neuroticism and a negative correlation with extraversion, agreeableness, and conscientiousness, while there was no statistically significant correlation between loneliness and openness to experience.

Several personality traits are associated with the potential for negative emotions in response to stress. These traits are overlapping and associated with many emotional problems. Theoretically, people with high levels of these traits are more likely to feel stress when exposed to a stressful situation or event, such as the outbreak of a pandemic, on top of these neurotic traits, which represent a predisposing risk factor for many anxiety and mood disorders (Taylor, 2019).

Recently, many studies appeared to identify the relationship between personality traits and the way to deal with COVID-19 pandemic, for example, Sutin et al. (2020) indicated that there were slight changes in Big Five Personality Factors, and also revealed a positive correlation between social isolation and neuroticism, a change in the concept of conscience and an increase in extroversion during the pandemic, the study also found that the personal traits of individuals affect their behaviour during COVID-19 pandemic, for example, neurotic, obsessive and open personalities, the study also mentioned that people's responses to events and stress differ according to their personality trait; the obsessive personality (a neurotic trait), for example, has an increased sense of fear and constant tension, this is likely to continue even after the end of the pandemic.

Khosravi (2020) mentioned that neuroticism is one of the indicators of the emergence of psychological immunity that predisposes the individual to infection with the COVID-19 virus. Albasheer (2020) concluded that the anxiety level of COVID-19 disease is between medium and high. A high degree of approval of preventive behaviours to confront this epidemic; a positive correlation between anxiety level and commitment to preventive behaviour; no statistically significant differences between males and females in the preventive behaviour; a significant difference in anxiety due to age in favour of the age group (21 and below); and significant differences in approval of preventive behaviour in favour of ages (51 and over).

Problem Statement

In this study, we tried to identify the relationship between personality traits and the way of dealing with crises, especially COVID-19 pandemic among Jordanian university students, by answering the following questions: Are there significant differences in the COVID-19 prevention instruction scale according to gender? What is the predictive ability of the personality trait in adhering to the instructions for dealing with the COVID-19 pandemic among Jordanian university students?

Method

Participants

The sample consisted of 386 university students who were selected randomly (simple random sample – online questionnaires) from university students in Jordan in the first semester of the academic year 2021–2022. 299 (77%) of the participants were females, and 87 (23%) were males. The universities were from three regions in Jordan: Northern Territory, Middle Territory, and Southern Territory, so there were three different cultures (urban, rural, and nomadic) which means that the level of the dealing with the disease crises may be influenced by the culture.

Research Instruments:

The Big Five personality traits scale (BFI)

John and Srivastava's (1999) BFI, which was translated to Arabic by Alazam (2017), was used to evaluate the Big Five personality traits among the study sample. It consists of 44 dichotomous items rated on a 5-point Likert-type scale (from not at all true' to very true'), measuring seven personality traits (extroversion = 8 items, agreeableness = 9 items, conscientiousness = 9 items, neuroticism = 8 items and openness to experience = 10 items). The scale is clear, easy, concise, and avoidable in terms of ambiguity, remoteness, boredom and exhaustion caused by long scales.

For this study, new psychometric properties were calculated. The construct validity was confirmed via corrected item—total correlation between the items and the total score for each dimension, which

ranged from .453-.720, .459-.792, .497-.723, .458-.728, .394-.764 for Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness, respectively.

The reliability of the scale has been examined by using Cronbach's alpha to measure the internal consistency, the values were .798, .792, .807, .778, and .820 for Extroversion, Agreeableness, Conscientiousness, Neuroticism, and Openness, respectively.

Corona Prevention Instruction Scale (CPIS)

Adherence to the instructions for dealing with the corona epidemic scale was built based on the instructions issued by the Jordanian Ministry of Health, which stipulated the necessity of social distancing by leaving a safe distance between individuals, wearing masks and gloves, not shaking hands and constantly sterilising hands using sterile materials (alcohol). The scale consists of 22 items distributed into two factors: the first one (executive actions) consists of 14 items and the second one (cognitive thoughts) consists of 8 items rated on a 3-point Likert-type scale (from '1 = not at all true' to 3 = very true').

The validity of the scale was evaluated using the principal component analysis (PCA), which was conducted to examine the construct validity of the scale. The results revealed that the final version of the scale according to PCA was a 22-item scale with two dimensions. Executive actions consist of 14 items (2, 3, 4, 5, 6, 7, 11, 12, 15, 18, 19, 20, 21, 22), while cognitive thoughts consist of 8 items (1, 8, 9, 10, 13, 14, 16, 17). The items loading for the two-factor solution for Corona Prevention Instructions Scale were shown in table (1).

Table 1. The Items Loading for the Two-Factor Solution for Corona Prevention Instructions Scale

Item number	Executive actions	Cognitive thoughts
1		**0.368**
2	**0.551**	
3	**0.665**	
4	**0.822**	
5	**0.497**	
6	**0.604**	
7	**0.647**	
8		**0.827**
9		**0.555**
10		**0.584**
11	**0.513**	0.509
12	**0.431**	
13		**0.770**
14	0.352	**0.483**
15	**0.472**	0.418

16			**0.716**
17			**0.724**
18		**0.673**	
19		**0.765**	
20		**0.644**	0.346
21		**0.827**	
22		**0.574**	

The reliability of following the COVID-19 prevention instructions scale was evaluated using Cronbach's alpha coefficient for each item and the scale total score to measure the internal consistency, the values were .902, 0.810, and 0.912 for executive actions, cognitive thoughts, and the total score of the scale, respectively.

Procedure

The five big factors trait scale (John & Srivastava, 1999) and the following COVID-19 prevention instructions scale were administered to the study sample (online) in the summer semester of the 2021–2022 academic year. It took about 30 minutes to response for the scales.

Results

To determine if there were significant differences in the COVID-19 prevention instruction scale due to gender means and standard deviations were calculated as presented in table 2.

Table 2. Means and standard deviations of the responses of the participants on the CVED-19 Prevention Instruction Scale

The measure	N	Mean	Std. deviation
Corona prevention instructions	386	57.58	22.14932

Table 2 showed that were surface differences on the responses of the participants on the COVID-19 Prevention Instruction Scale. T-test for independent sample was conducted to determine if the difference were significant, but the results revealed that there were no significant differences in the COVID-19 prevention instruction scale due to gender (t= -1.468, df=384, p=.143).

To examine the Big Five personality traits ability to predict following COVID-19 prevention instructions, a multiple regression analysis was performed using the enter method. Table 3 shows the results.

Table 3. Multiple Regression Analysis for Five Big Factors with the Following COVID-19 Prevention Instructions

Variable	R^2	F	Sig.	B	*B*	*t*	Sig.
Model 1	.822	350.303	.000				
Constant				-58.973	-	-17.299	.000
Extraversion				.865	.205	4.620	.000
Agreeableness				.724	.228	5.220	.000

Conscientiousness	.970	.267	6.053	.000
Neuroticism	.127	.032	.712	.477
Openness	1.018	.256	5.850	.000

Table 3 shows that the total regression model succeeded in predicting following COVID-19 prevention instructions significantly (F = 350.303), and the Five Big Factors explained 82.2 % of the variance of the following COVID-19 prevention instructions. Table 3 also shows that extraversion, agreeableness, conscientiousness, and openness can significantly predict the following of COVID-19 prevention instructions significantly (β = 0.205, 0.228, 0.267, and 0.256). We can also notice that the best personality trait predictor of following COVID-19 prevention instructions is conscientiousness, followed by openness, agreeableness, and finally extraversion.

Discussion

This study aimed at investigating the Big Five personality traits to predict the following of COVID-19 prevention instructions during the COVID-19 pandemic among Jordanian University students. We supposed that personality traits might have an important predictive ability for compliance with the instructions to deal with the COVID-19 pandemic in Jordan.

The results showed that no significant differences in the COVID-19 prevention instruction scale according to gender were found; this result is in line with Albasheer (2020). The reason for the insignificant differences between males and females in adhering to COVID-19 instructions may be due to the seriousness of the pandemic, as it is a pandemic that affected the whole world, and took media coverage and governmental attention in all countries of the world. Since it is known that when disasters and pandemics intensify, everyone takes them seriously, regardless of gender.

The results also revealed that there were significant differences in the COVID-19 prevention instructions scale according to personality traits. Conscientiousness significantly predicted the following of COVID-19 prevention instructions among Jordanian university students, which means that students who have high scores on conscientiousness also have high scores in following COVID-19 prevention instructions. This is in line with many previous studies (Brouard et al., 2020; Carvalho et al., 2020; Schmeisser et al., 2021) that found the same result. According to the findings of this study, conscientiousness is the strongest trait that predicts following COVID-19 prevention instructions (β = 0.267).

In the definition of conscience, the owners of this trait are characterised by efficiency, organisation, responsibility, the ability to control and self-discipline, quenching, thinking before taking any action, delayed gratification and high motivation (McCrae & Costa,

1996). Conscientiousness is positively associated with the ability to be well organised, vigilant and responsible (Barrick & Mount, 1991), as well as with the ability to self-control and maintain order (Costa et al., 1991).

Individuals who have a high level of conscientiousness tend more to practice social divergence to avoid infection, their high level of conscience makes them feel responsible towards others, which is another reason for their commitment to social divergence and their instructions for dealing with the COVID-19 pandemic. Organisation and responsibility are considered indicators of a living conscience, especially the responsibility that makes individuals with a high conscience adhere to the instructions and messages addressed to the public with the aim of limiting the speed of the spread of the epidemic. Individuals who have a high level of conscientiousness are often organised, submissive and act wisely and efficiently. They are motivated to achieve and continue to work without encouragement or boredom. The opposite of this type of personality is characterised by indifference, a lack of seriousness and a lack of commitment.

Openness is associated with traits that focus on the importance of being open to other people's experiences and feelings, reflecting the extent of the individual's mental maturity and the extent of tolerance and peace among individuals (Douglas et al., 2016). It is also associated with positive motivation in cooperation with others, the desire for self-discovery, innovation and independence in searching for information; the owners of this personality trait love the arts; and they do not have orientations towards politics (Soldz & Vaillant, 1999).

This type of personality is most closely related to relationships with others (Hogan & Hogan, 2007). They can face problems and life stresses with tolerance and trust, good manners, cooperation and respect for others (De Raad, 2000; Zhang, 2006).

All these features of those who are open to experience may have played an important role in adhering to the instructions during the COVID-19 pandemic.

This trait is bipolar, as it can be called (extroversion-introversion). The extroverted person is characterised as a person who loves to interact with others, agrees with external circumstances, directs his interests outside himself, loves to work with others, respects traditions and authority, on the side of thinking, the extroverted person tends to interpret the events of the outside world using logic, the tendency to live according to fixed rules, while the introverted person is characterised by directing his interests within the self rather than directing them towards the outside world, and is very sensitive even though he suppresses his feelings. On the thinking side, the introverted person tends to interpret his thoughts based on his own rules, and he has a great need for privacy (De Raad, 2000; Zhang, 2006). Costa and

McCrae (1995) mention that the extrovert is a tactful, optimistic and cheerful person.

Extroverts have positive attitudes towards appreciating achievements, social interactions, appreciating social habits, self-motivation, avoiding calmness and reserving, and their social presence is very strong (Roccas et al., 2002).

Extroverts are characterised by a variety of interests, a broad imagination, exploration, the fine arts, innovation and production, the ability to relate things to each other, respect the ideas of others, view the world as a place of learning, appreciate beautiful things, and have an affection that makes them close to others (McCrae & Costa, 1989; McCrae & John, 1992). People with this personality trait tend to be social, caring, talkative, positive problem solvers, energetic, happy, active, thrill-seeking, assertive, optimistic, warm and full of positive emotions (McCrae & Costa, 1989; Watson & Clark, 1997). Extraversion is positively associated with feelings of happiness, pride, achievement and coping with different situations and negatively with stress and fear (Penly & Tomaka, 2002). Hence, extroverts are expected to adhere to the instructions, including COVID19.

The study findings also found that agreeableness significantly predicted the following of COVID-19 prevention instructions among Jordanian university students, which means that students with high scores on agreeableness also have high scores in following COVID-19 prevention instructions. This is in line with Schmeisser et al. (2021) recommendations.

People with agreeableness are characterised by self-efficacy, self-confidence, positive feelings towards others, empathy, straightforwardness, tolerance, altruism, acceptance, deliberation and humility when dealing with others (Costa & McCrae, 1992), and they have a tendency to help and please others (Bruck & Allen, 2003). This type of personality corresponds to suspicion and a lack of cooperation or interaction with others. Hence, it is natural that people with this type of personality who possess positivity and sympathy for others, especially those who have been infected with corona disease, are more committed to the instructions for preventing the disease, their integrity makes them apply the instructions in general, they are deliberate and think about the consequences of their behaviour and social interaction, thus, they avoid doing any behaviours that could make them or others a victim of the disease, and they have the desire to help others, whether to avoid contracting the disease or recover from it, they are good implementers of instructions to prevent COVID-19, and thus the predictive ability of this type of personality appeared by committing to follow COVID-19 prevention instructions.

As for the ability of neuroticism to predict adherence to instructions for dealing with COVID-19, the results showed that there is no statistically

significant predictive ability. In the same direction, the results of studies varied regarding the relation between neuroticism and adherence to instructions. Some studies concluded that there is a negative relationship between neuroticism and adherence to prevention instructions (Aschwanden et al., 2020; Brouard et al., 2020), others revealed a positive relationship (Asselmann et al., 2020; Götz et al., 2020). Schmeisser et al. (2021) found that there is an indirect effect of neuroticism on adherence to the instructions for dealing with COVID-19. This variation in results may indicate that the relationship may be more complex and needs more research.

There are many negative traits that characterise neurotics, which may explain their lack of adherence to instructions. Such as anxiety, depression, aggression, anger, shyness, confusion, impulsiveness, and an exaggerated emotional response, have difficulty returning to the normal state they were in before their negative emotional experiences, resulting in emotional instability, dissatisfaction with oneself, difficulty adapting to the requirements of life and low self-esteem (McCrae & Costa, 1989; McCrae & John, 1992; Zhang, 2006).

Schmeisser et al. (2021) pointed out that neurotic people are less confident in the WHO, and this lack of confidence is associated with less adherence to instructions. Neurotic people are more concerned about finding sources of information that they can trust; therefore, they are more concerned about the pandemic. This, in turn, may be reflected in their confidence in the instructions issued by the health authorities; this lack of confidence may lead to poor adherence to the instructions issued.

Although the results of this study appeared promising, some limitations must be pointed out, such as the impossibility of generalizing the results beyond the specific sample of Jordanian university students that was used in the current study because of the specific culture of the participants. Additionally, the results of the study are limited to the disparity in the number of males compared to females, due to the nature of admission to universities in some majors.

The future research should use samples that are more widely representative of university and school students in Jordan and other countries, and the results of other international studies should be studied and compared. Moreover, future studies should take in account the culture diversity in dealing with health problems.

Conclusion

In the current study, our aim was to identify the predictive ability of personality traits in adherence to instructions for dealing with the Corona pandemic, The study found important results which revealed that the personality traits play important roles in dealing with pandemics, specifically health pandemics.

we can notice that the best personality trait predictor of following COVID-19 prevention instructions is conscientiousness, followed by openness, agreeableness, and finally extraversion, this means that these four personality traits trust the instructions and know the importance of applying them in their behavior to maintain their safety and avoid infection with the virus. We can also note that the neurotic personality trait did not predict adherence to instructions, and this means that the owners of this personality trait do not trust the instructions and do not adhere to them.

This leads us to the fact that official institutions must deal with individual and group differences when developing instructions for dealing with natural and human disasters. Based on the results of the study, we can say that it is necessary to include the dimensions of mental health and dealing with crises in the curricula of undergraduate students, or in a separate course.

Also, universities should take care of developing counseling and guiding programs to strengthen the personal characteristics of students who are most committed to instructions during pandemics, as well as knowing the personal characteristics of students who are less committed and providing them with more information about pandemics, their dangers, and how to deal with them in order to provide them with positive attitudes towards adhering to instructions during pandemics that they may be exposed to humans at any time and place.

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