

# NATIONAL CULTURE AND PREVENTION AND CONTROL OF COVID-19: THE MEDIATING ROLE OF THE RELIGIOUS DIMENSION IN THE JORDANIAN HOSPITALS

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## ABSTRACT

*This study sought to determine the impact of national culture dimensions: power distance, collectivism, masculinity, uncertainty avoidance, and time orientation according to the Hofstede model, on the management and control of Covid-19 in the three stages: prevention, diagnosis, and treatment in a sample of Jordanian hospitals. This study was also concerned with studying the impact of the religious dimension as a mediating variable on the causal relationship between national culture and the prevention and control of Covid-19. The sample consisted of a group of government and private hospitals. The sample size was 220 respondents, who were distributed among these hospitals. The results of the study confirmed that three dimensions (power distance, uncertainty avoidance, and time orientation) had a statistically significant effect on the three stages of Covid-19, while the collectivism had no statistically significant effect on covid-19 prevention and diagnostics. Masculinity also had no significant effect on Covid-19 treatment.*

**Keywords:** Hofstede Model, National Culture Dimensions, Religious Dimension, Covid-19, Pandemic Prevention and Control.

## INTRODUCTION

The national culture include values, mutual heritage, religion, language, social habits and others associated elements unify this group and state the way of they live (Mahadevan, 2020). Each country has its own culture that represents the unique historical, geographical and human mix that is distinct from other cultures. However, the cultural differences between these countries and their societies do not tell the whole story. As there are basic factors and dimensions that can be studied as comparable common denominators in these cultures. Many models of national culture were presented, but Hofstede's model was the most comprehensive and able to represent the national culture. Therefore, this model has received the most attention in studies, applications and comparisons between national cultures in countries of the world. In the conditions of the most serious pandemic in the past several decades, the current study sought to use the dimensions of national culture in this model in order to determine the impact of this culture on the prevention and control of Covid-19.

Crises and natural disasters with extreme damage and high risk are a general phenomenon that occurs from time to time. In many cases, countries develop emergency plans and early warning systems to confront such disasters and crises, yet unexpected factors are usually the most frequent and influential in determining the repercussions of these crises and

disasters. From the beginning of the twentieth century until now, there were the first and second world wars in which almost all countries of the world participated. There were also six major crises: 1929-1933 (lasting about 40 months); 1937-1938 (13 months); 1973-1975 (16 months); 1981-1982 (16 months); 2007-2008 (18 months) (Basco, 2018; Bosen, 2005; ), and finally, the Covid-19 pandemic with its multiple waves variants and mutated strains of the virus (which started in March 2020 and its effects in all countries of the world are still continuing until now) (Soriano et al., 2021). COVID-19 pandemic, can be labelled a 'Black Swan as a rare and unpredictable virus (Nummela et al., 2020). Certainly, Covid-19, with the increase in victims and the suffering of all countries of the world from its health, economic, and social risks, is closer to a global catastrophe that finds its negative effects everywhere and at the same time. In order to provide an analogy that helps understanding, this pandemic is similar to a world war whose battles and destruction were visible on different economic sectors in all continents, regions, and countries (Sun & Hennekam, 2022; Baldwin & di Mauro, 2020). The spread of Covid-19 has been declared a public health emergency of international concern, and the pandemic has now spread to all countries and regions in the world. The negative effects of COVID-19 extended to different economic sectors and business areas such as tourism (Knight et al., 2020; Baum et al., 2020), restaurants (Yang et al., 2020), supply chain (Dubey et al., 2022), universities (Alharbi, 2020), hospitals (Blavin & Ramos, 2021), self-employees and informal sector (Omobowale et al., 2020) and others. Air transport and tourism represent the sectors most affected by the closure and the suspension of flights for relatively long periods, for example, the occupancy rate of hotels in China amounted to less than 23%.

However, hospitals, which are usually considered a source of health care and protection, were the most dangerous due to the exposure of health staff to COVID-19 infection (Blavin & Ramos, 2021; Sun & Hennekam, 2021). Many studies have sought to verify the impact of Covid-19 in different contexts such as a social capital (Visentin et al., 2021), culture, shared human values (Wolf et al., 2020), community lifelines as basic services and crucial needs for the community to enable societal functions (Abas et al., 2021). The variation in different countries of the world in terms of infection levels with Covid-19 raises important questions about the role of national culture in different countries and its impact on explaining these differences in the level of infection. This study sought to determine the impact of national culture dimensions (power distance, collectivism, masculinity, uncertainty avoidance, and time orientation,) according to the Hofstede model, on the prevention and control of this pandemic. This study was also concerned with studying the impact of the religious dimension as a mediating variable on the causal relationship between national culture and the prevention and control of Covid-19.

## National culture

National culture is the programming of the collective mind that distinguishes members of a community (a country) from members of other communities (Hofstede, 2011). In this sense, the national culture is the pre-programming of the collective mind of individuals by society before entering work and contacting the organizational culture of the company. However, the concern for organizational culture took precedence over the concern for national culture. Leading companies characterized by a strong organizational culture (distinguished shared value system) unite the values and behavior of individuals in the company. But organizational culture does not tell the whole story, in the light of globalization that employs people from different environments

and cultures, these companies need to manage culture (Wagner III and Hollenbeck, 2010) and manage across culture (Browaeys & Price, 2008).

The study of national culture can be done according to two perspectives: Emic and Etic (Gelfand et al., 2013; Cheung et al., 2011). Emic perspective is the indigenous perspective that refers to the local culture and its distinctive characteristics as in the study of the Gulf (Jackson et al., 2012) Chinese (Wang et al., 2005) and Arabic culture (Jordan is one of the Arab countries) (Najm, 2015; Al-Omari, 2008). The Etic perspective is the perspective of international models, which is concerned with common dimensions and characteristics of national cultures and the levels of their appearance in each of the countries. This perspective helps to study the national culture through main dimensions that are comprehensible and comparable.

International models for the dimensions of national culture started from the basic assumption that the national culture of a country determines the type and level of response of groups and individuals in each country to various phenomena (including COVID-19). Many international models have been presented with different dimensions in terms of number and features such as: five dimensions of Kluckhohn and Strodtbeck model (1961); five dimensions of Gesteland (1999); five dimensions of 200's model (1988, 1997); four dimensions of Hall's model (1990); three and seven dimensions of Schwartz's model (1992, 1996, 2006), six dimensions of Trompenaars model (1993); nine dimensions of Globe Project (House, 2004).

These models have received the attention of researchers, but the Hofstede model has received the most attention because it has two important advantages. Its five dimensions were more comprehensive and important in representing the national culture. The second feature is the package of services provided by "Hofstede Insights" in preparing a map of countries and regions of the world according to these dimensions. In fact, this cultural map helped researchers to implement useful comparisons between countries of the world (Zagladi, 2017).

Although Hofstede's model is the most widely used, it has been challenged by repeated suggestions to add more dimensions to the original model. In the original model, there were four dimensions (Hofstede, 1984). In 1988 a fifth dimension was added (Hofstede, 1984). In 2012, a sixth dimension was also added (Littrell, 2012, p4), Then in 2013, Monumentalism and flexumility were added as the seventh dimension (Minkov, 2012). In 2013 again, the seventh dimension (Monumentalism and flexumility) was added to the model. Finally, Eloquence was also added as an eighth dimension (Dumitrescu, 2012, p163). In this study, the Hofstede's five dimensional model was used because it represents the most widely used model and covers the basic dimensions of national culture. The five dimensions of the Hofstede model are (Soares et al., 2007; Pifeh et al., 2017; Guo et al., 2020; Parsons, 2017):

1. **Power distance:** According to Hofstede (1984), power distance refers to the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally. Cultures with High power distance indicate a high hierarchy and a large difference in the distribution of power between the superior and subordinates.
2. **Uncertainty avoidance:** This dimension indicates the extent to which individuals accept risk and allow ambiguity in their decisions and practices. In low uncertainty avoidance cultures, individuals are more inclined to deal with new ideas and take risks, accept changing jobs and not hesitate to try new things. While in high uncertainty avoidance cultures, individuals desire routine activities, job security, avoidance of risk and ambiguity at work.
3. **Masculinity and femininity:** In masculine cultures, individuals are ambitious and seek success, achievement, competition for excellence and substantial material gains. Whereas in feminine cultures,

individuals are humble and prefer cooperation, human relationships, quality of work, and gentleness with others.

4. **Individualism versus collectivism:** Individual cultures focus more on the self than the group, autonomy over group dependency, personal choices and relationships (the individual and the small family) are more important than group values and beliefs. While the collective cultures are quite the opposite.
5. **Long and short time orientation:** In cultures of long-term orientation, individuals focus more on future long-term goals and responsibilities. Whereas, in short time orientation, individuals are concerned with immediate goals and short term gains. Hofstede's model states that each dimension ranges between two extremes (individualism-collectivism or long- or short-term temporal orientation), the individualism versus collectivism dimension ("*I versus We*") means that the low rating in individualism or short time orientation (now versus future) will mean a high evaluation in the collectivism. Also, the short-term orientation that is weak in a particular culture will mean that the culture has a strong long-term orientation. According to (Hofstede Insight), Jordan scored the following evaluations in the five dimensions: power distance (70), individualism (30), masculinity (45), uncertainty avoidance (65), long-term orientation (16). While we find, that the evaluations of these dimensions were in the United States (40, 91, 62, 46, 26) and China (80, 20, 66, 30, 87), respectively. This means that Jordan is characterized by a high divergence of power and an acceptance of unequal distribution, low individualism and high collectivism, affinity of femininity with masculinity, high avoidance of uncertainty, and finally a high short-term orientation. These evaluations mean that Jordan is characterized by a high level of power distance and acceptance of its unequal distribution, low individualism and high collectivism, convergence of femininity with Masculinity, a high avoidance of uncertainty, and finally a high short-term orientation.

## Covid-19

At the end of 2019, Wuhan, the capital of Hubei Province in China, was on a frightening date with a dangerous virus leaking from one of its laboratories and then spiraling out of control. In February 2020, the epidemic spread to 54 countries within four world infection transmission complexes: China (centered in Hubei), East Asia (based in South Korea and Japan), Middle East (based in Iran) and Western Europe (based in Italy) (Congress of the US of America). Due to the significant increase in the number of infections worldwide, the World Health Organization declared the pandemic outbreak to be a "public health emergency of international concern" on January 30, 2020. According to the statistics of the WHO, there were (22.8) million confirmed cases in August 2020 and (795) thousand deaths (Cao et al., 2020), these numbers, which were constantly increasing, rose to (225) million confirmed cases and (4.636) million deaths in mid-September (WHO, 2021).

The world in the conditions of Covid-19 is suffering from a real serious crisis for at least three reasons: i. The number of confirmed cases is still increasing daily, even after taking strict preventive measures and the emergence of multiple vaccines in the world. According to the WHO, the number of confirmed cases was (221.6) million on September 5 (2021), and increased to (223.0) million on September 10, then to (225.0) million on September 15. The number of deaths also increased from (4.58) to (4.60) and (4.64) million respectively (<https://covid19.who.int/>). These figures indicate that the number of deaths increased by (35) thousand deaths in the last five days. ii. At the same time, the whole world suffers from the risks and repercussions of this pandemic, while all previous crises and pandemics were occurring in countries and regions, not in the whole world (with the exception of the first and second world wars). iii. Our world has been witnessing for more than 18 months an increase in the number of

injuries and deaths due to the Covid-19 pandemic. Therefore, this pandemic is expected to continue with all its risks and damages for another period to come.

The Covid-19 pandemic has caused a major systemic economic shock related to business stagnation due to closures and quarantines resulting in a lack of resources to invest and finance existing and emerging entrepreneurial projects (Brown, 2020). However, Many companies that are both dynamic and entrepreneurial have been able to take advantage of the opportunities created by the pandemic (Manolova et al., 2020). We must remember the duality even in a pandemic, as its dark sides are accompanied by the bright side as well. Many companies that are characterized by dynamism, as in entrepreneurial projects, have been able to take advantage of the opportunities created by the pandemic. At the same time, the COVID-19 pandemic has brought about a major economic shock related to business stagnation, increased unemployment, and lack of funding for existing and nascent entrepreneurial projects (Brown et al., 2020).

Now, how does COVID-19 work in societies? The national culture helps to answer this question. We don't see culture but find it with us in everything we deal with, even in our fears of the COVID-19 pandemic. It is deeply rooted in the thinking and practice of members of the National Community. Collectivistic cultures are more susceptible to infection while individualistic cultures can be less contagious. Health personnel working in hospitals can be a good transmitter of infection in collectivistic cultures rather than individualistic cultures through frequent participation in social events such as visits, weddings, and mourning gatherings. Strong power divergence could contribute to such contagion because group members were more responsive to hierarchical relationships than to demands for prevention and avoidance of danger and uncertainty. At the same time, patriarchal and patriarchal societies are vulnerable to infection from feminine societies, which tend to be safe and not venturing in pandemic conditions.

According to this study, the management and control of this pandemic is represented in three main stages: prevention (sterilization, social distancing, quarantine and vaccination with various vaccines and doses), diagnosis (confirming symptoms, taking swabs in order to confirm the negative or positive result) and treatment. (Quarantine under medical supervision, obtaining medication, intensive care with artificial respiration). Health organizations operating in dangerous pandemic conditions need exceptional measures to protect their health staff, and they need organizational agility to improve their rapid and flexible response (Jasser, 2021). International studies have revealed that there is a disparity in access to vaccines between developed (rich) countries and developing countries (especially poor countries), which puts our world in front of a painful moral problem of inequality in front of death in our world and will also lead to a delay in the recovery of the global economy. In the same context, it can be said that the difference in national cultures can be associated with the disparity in the ability to confront Covid-19, whether in the prevention or control of the pandemic.

### **Covid-19 and national culture**

WHO has announced emergency status at over the globe which continuously influenced the most societies with no exception of its catastrophic outcomes (Velavan & Meyer, 2020).the world bears huge burden of this increasing among the mortality and the incidents in many states and continents (Yuki et al., 2020). The cultural difference between countries makes these countries differ in their response to problems and crises. This difference in response could apply to the COVID-19 pandemic. Culture, as a collective programming of the mind, can be applied to

can be applied to countries, companies, professions, occupations, ethnic and religious groups and it affects the way people respond. The national culture in its various dimensions affects companies, values of organizational employee and their loyal involvement/ utilitarian involvement (Smith et al., 1996), social capital (Allik & Realo, 2004) social and environmental performance (Ringov & Zollo, 2007), corporate governance (Li & Harrison, 2008) international management behaviors (Pagell et al., 2005). According to Sherman & Roberto (2020); Tran (2020), culture plays a crucial role in various crises and in the unacceptable prejudices that have emerged during the global pandemic of COVID-19 (Roberto et al., 2020). In this sense, it can affect the interaction of individuals with any crises or problems in the public life of societies, as in the case of Covid-19, which affected widely and profoundly all societies without exception (Shi et al., 2020).

Accordingly, the national culture as a five-dimensionality can affect the level and the way individuals respond to the requirements of prevention and control of COVID-19. The current study seeks to explore the impact of these five dimensions on the prevention and control of COVID-19 through the following hypotheses:

*H<sub>1</sub>: Dimensions of national culture (power distance, collectivism, masculinity, uncertainty avoidance, and time orientation) positively affect the prevention of COVID-19*

*H<sub>2</sub>: Dimensions of national culture positively affect the control of COVID-19*

In the current study, religion is a mediating variable that affects the relationship between national culture and the three stages of COVID-19. Religion is one of the most influential factors in the past, as most historians are skeptical about religion, recognizing its important role in the lives of people everywhere (Durant & Durant, 2012). It is also still influential in contemporary life, especially in the Arab countries, including Jordan. In times of crisis and disaster, including the COVID-19 crisis, religion offers hope and rest in helping people better cope with their threats they are experiencing. they are experiencing (Bozewicz & Boguszewski, 2021). This study was interested in another dimension of culture, the religious dimension as a mediating variable because Hofstede's model neglected this dimension despite its importance in societies, especially in conditions of crises and high risks as in the conditions of Covid-19. According to the Gallup survey (2012), which included (54) countries for the global index of religion and atheism, the results confirmed that the population of forty countries (including the United States, Russia, Germany, France, Italy, Spain, Belgium, Switzerland, Malaysia, Turkey, India, Pakistan, Brazil, Nigeria, etc.) tend to be religious, with a range of 50-96. The religious dimension as a mediating variable was tested through the third hypothesis:

*H<sub>3</sub>: The religious dimension positively affects the causal relationship between national culture and the management and control of Covid-19 with its three stages (prevention, diagnostics and treatment).*

## METHOD

### Measures

The questionnaire was used as a tool for data collection in this study. It has been relied on the many studies that used the Hofstede model in order to develop the questionnaire items for the five dimensions of national culture (power distance, collectivism, masculinity, uncertainty avoidance, and time orientation). Whereas, researchers have developed a questionnaire items for

the three stages of Covid-19 management and control. Also, the many studies that focused on the religious dimension have been used to develop the questionnaire items related to this dimension (Hofstede, 2011; Yoo et al., 2011). The dimension of power distance (PD) was measured by six elements (PD<sub>1</sub>-PD<sub>6</sub>): collectivism-individualism (CI) by six elements (CI<sub>1</sub>-CI<sub>6</sub>); masculinity and femininity by five elements; uncertainty avoidance (UA) by six element (UA<sub>1</sub>-UA<sub>6</sub>); and time orientation (TO) by six elements (TO<sub>1</sub>-TO<sub>6</sub>). The religious dimension (RE) as a mediating variable was measured by six element (Re<sub>1</sub>-Re<sub>6</sub>). In this study, the IBM SPSS Amos program was used to represent the causal relationships between the variables according to the hypotheses of the study. Figure 1 shows these relationships through the study model. Five-point Likert scale used to measure questionnaire items ranging from 1 (strongly disagree), to 3 (neither agree nor disagree), and 5 (strongly disagree).

## Respondents

During the period of preparing this study at the end of 2000 and the beginning of 2001, the number of hospitals in Jordan reached 117, distributed as follows: 69 private hospitals, 31 government hospitals, 15 military hospitals, and two teaching hospitals. In this period, there were strict procedures for quarantine in homes and stopping work in government institutions and business companies, but hospitals were exempt from the shutdown measures and continued to operate on the front line with COVID-19. Because of these circumstances, the online questionnaire was used to achieve the purpose of the study.

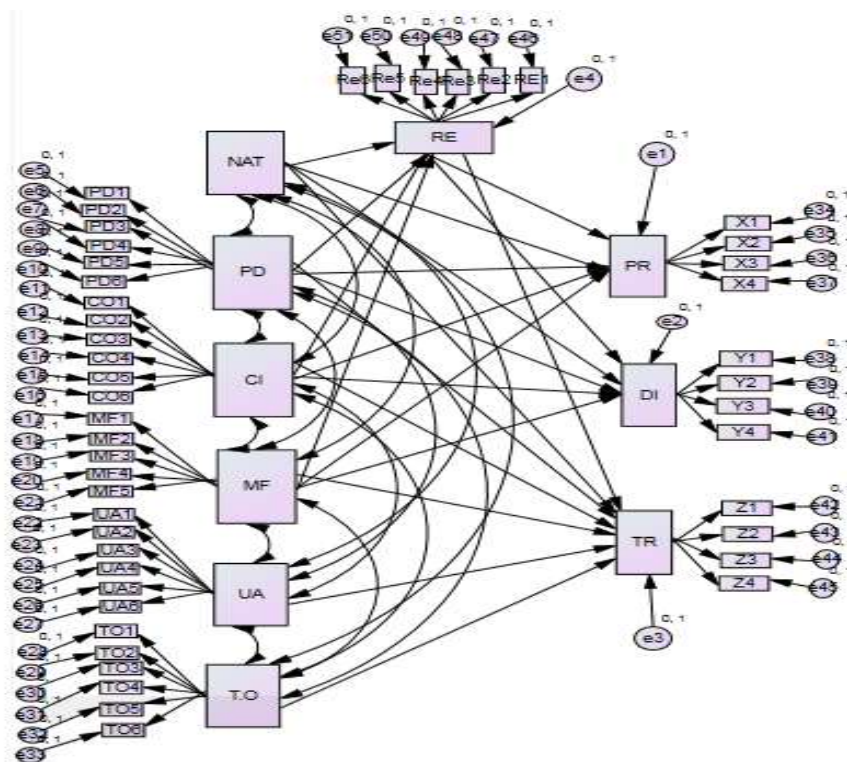


Figure 1  
MODEL OF THE STUDY (WITH QUESTIONNAIRE ITEMS)

The study sample consisted of 220 respondents who were randomly taken from 13 public and private hospitals. Hospitals in the study sample were taken from five Jordanian governorates and cities (Amman; Irbid, Ma'an, Jerash; and Salt). These hospitals are: Princess Basma hospital (Irbid); hospital (Irbid); King Abdullah hospital (Irbid); Al-Bashir hospital (Amman); Prince Hamzah hospital (Amman); Dr. Jamil Al-Tutanji hospital (Amman); Arab medical center hospital (Amman); Jordan hospital (Amman); Istishari Hospital (Amman); Al Amal Hospital (Amman); Jordan University hospital (Amman); Al-Hussein hospital (Salt); Jerash Hospital (Jerash), and Ma'an hospital (Ma'an). The characteristics of the respondents show that the sample members were 54% of males and 46% of females. The age group (40 years and over) represented 49%, and the percentage of those with more than 10 years of work experience represented 44%. Table 1 shows these characteristics of respondents.

<b>Table 1</b>		
<b>THE CHARACTERISTICS OF SAMPLE (N-220)</b>		
<b>Characteristics</b>	<b>Frequency</b>	<b>%</b>
<b>Gender</b>		
Male	118	53.6
Female	102	46.4
<b>Total</b>	<b>200</b>	<b>100.0</b>
<b>Age</b>		
< 30	77	35.0
30-39	81	36.8
40-49	49	22.3
50-59	53	20.8
> 59	13	5.9
<b>Total</b>	<b>220</b>	<b>100.0</b>
<b>Marital status</b>		
Single	76	34.5
Married	144	65.5
<b>Total</b>	<b>220</b>	<b>1.00</b>
<b>Educational level</b>		
Diploma	17	7.7
Bachelor degree	153	69.6
Higher studies	18	8.2
Consulted	32	14.5
<b>Total</b>	<b>220</b>	<b>100.0</b>
<b>Working experience (years)</b>		
< 5 years	82	37.3
5-9	42	19.1
10-14	42	19.1
> 14	54	24.5
<b>Total</b>	<b>220</b>	<b>100.0</b>
<b>Job title</b>		
Doctor	51	23.2
Ray staff (Specialist and technician)	46	20.9
Nurses	26	11.8
Administration	35	15.9
Pharmacy Other	52	23.6
Other	10	4.6



<b>Total</b>	<b>220</b>	<b>100.0</b>
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## Tests

In order to ensure that the questionnaire items are appropriate to represent and measure the study variables, reliability and validity tests were conducted for this purpose. In the reliability test, Cronbach's alpha was used to ensure internal consistency between the resolution items. The cut-off point for this test is .70 (Hair et al., 2019, p760). The results of this test confirmed that the questionnaire items for each variable are characterized by internal consistency and that Cronbach's alpha for the study variables was greater than .70 (see Table 2). Validity test refers to how well the instrument measures what it is intended and designed to measure. Further, it refers to appropriateness of questionnaire items to ensure the accuracy of the analysis, measurements, testing, and interpretation (Sekaran and Bougie, 2016). Construct validity provides evidence and confidence that questionnaire items from a sample are a good representative of the population being measured. To test the construct validity, factor analysis loadings and Kaiser-Meyer-Olkin (KMO) were used to determine sampling adequacy. Factor analysis loadings for the questionnaire items whose values are greater than .30 are appropriate for measurement and analysis. Hair et al., (2018, p151) also confirmed that values of these loadings within a range of  $\pm 0.30$  to  $\pm 0.40$  to meet the minimal level for interpretation of structure, and  $\pm 0.50$  or greater are considered practically significant. Table 2 shows that all values of factor analysis loadings were greater than .30. Also, the values of KMO of study variables were greater than .50 and within a range of .648 to .900.

Table 2 CONSTRUCT VALIDITY TEST					
	Statements	Extraction	Factor 1	KMO	Cronbach's Alpha
I. National culture (Independent variables)					
Power distance					
1	The hospital administration depends on the central policy in its operating procedures.	.352	.593	.860	
2	Hospital management focuses on strict adherence to formal business methods.	.708	.842		
3	The hospital administration is concerned with a series of administrative references in all procedures required for work	.689	.830		
4	The hospital administration encourages the medical staff (doctors, nurses, technicians, administrators) to implement instructions with high accuracy	.780	.883		
5	The hospital administration transforms supervisors with great powers to impose what they want on the medical staff.	.366	.605		
6	The hospital administration provides the supervisors with all the information in directing the work	.678	.824		
Collectivism					
1	The hospital encourages the medical staff to work in a group manner	.675	.822	.900	
2	The hospital encourages cooperation between the medical staff and the administration	.775	.882		
3	The hospital informs the medical staff of the importance of group decisions in the hospital	.825	.908		

4	The hospital evaluates the work on the basis of the degree of harmony between the staff	.805	.895		
5	The hospital encourages building confidence among the medical staff	.787	.884		
6	The hospital takes into account the conditions of the workers	.541	.735		
Masculinity					
1	The hospital encourages supervisors and administrators to be usually men.	.640	.800	.648	
2	The hospital gives the authority to administrators to be decisive and strict in their decisions	.491	.510		
3	Male medical staff shows greater ability to withstand work stress than females	.660	.620		
4	The hospital offers higher salaries for males than females	.669	.741		
5	Female medical staff tend to participate in training programs for achievement more than males	.693	.415		
Uncertainty avoidance					
1	The hospital encourages the medical staff to seek the opinion of supervisors on the new operations.	.600	.774	.800	
2	The hospital seeks to stabilize the medical staff to work for as long as possible	.739	.825		
3	Medical personnel accept supervisors and managers' interference in the details of their work	.732	.727		
4	The hospital supervisors and directors give directions to the medical staff on an almost daily basis.	.651	.797		
5	I see that the hospital asks the staff to strictly adhere to what is required of them in writing.	.695	.765		
6	I see that the medical staff suffers from tension when there are many agencies that provide medical and professional guidance and advice at work.	.852	.461		
Time Orientation					
1	The medical staff enjoys long-term relationships with the hospital administration	.635	.797	.872	
2	Hospital staff are loyal to the hospital's name and reputation	.700	.837		
3	The hospital is working on developing long-term future plans to develop the hospital's activities and operations.	.764	.874		
4	The hospital adopts a career development program for the medical staff.	.750	.866		
5	The hospital tends to be stabilized until the medical staff is working.	.775	.878		
6	There are medical staff who move to work in other hospitals when there are more job incentives.	.190	.436		
II. Epidemic prevention and control dimensions					
Covid-19 prevention					
1	The hospital has introduced new procedures and services to prevent the COVID-19 pandemic.	.749	.865	.812	
2	The hospital obliged the patients to wear (muzzle and gloves), spacing and sterilization to prevent Covid-19	.813	.902		
3	Hospital awareness of workers to prevent Covid-19 virus.	.798	.894		
4	The hospital sought to secure the latest vaccines to vaccinate workers for the prevention and improvement of Covid-19	.506	.711		
Covid-19 diagnostic					

1	The hospital has introduced new diagnostic tools for the Covid-19 virus.	.794	.891	.749	
2	The hospital has introduced new laboratories to diagnose Covid-19 virus.	.809	.900		
3	The hospital required all employees to take periodic tests for Covid-19.	.637	.798		
4	The hospital examines staff when suspected of having Covid-19.	.506	.711		
Covid-19 treatment					
1	The hospital has introduced new equipment and technology for the treatment of Covid-19.	.684	.827	.741	
2	The hospital has upgraded rooms and increased beds for treating Covid-19.	.669	.818		
3	The hospital organized specialized training courses for medical staff members and increased experiences in treating Covid-19.	.695	.834		
4	The hospital formed scientific research teams to find and improve a treatment for Covid-19.	.760	.872		
Religious dimension (Mediating variable)					
1	Medical staff and administrators abide by religious rituals.	.640	.800	.819	
2	Medical staff demonstrate their faith in the performance of their work.	.781	.884		
3	The medical staff clearly embodies their religious values with their behavior.	.720	.848		
4	Medical staff perform their religious duties (such as prayer) during hospital working hours.	.598	.773		
5	The medical staff talks about their religious values openly with others.	.294	.542		
6	The medical staff reassures patients through religious expressions.	.418	.646		

Another important test is the inter-correlation test to ensure that there is no collinearity problem with high discriminability between variables (Hair et al., 2019, p211, and to make sure that the correlation is not between the variable and itself (Ssebulime and Edward 2019). This test requires that the value of the correlation coefficient is not 1 or very close to it. Table 3 shows that the values of the correlation coefficient for all variables ranged between (.165-.743) and did not indicate that there is an overlap between the variables. Therefore, these variables do not suffer from the problem of collinearity.

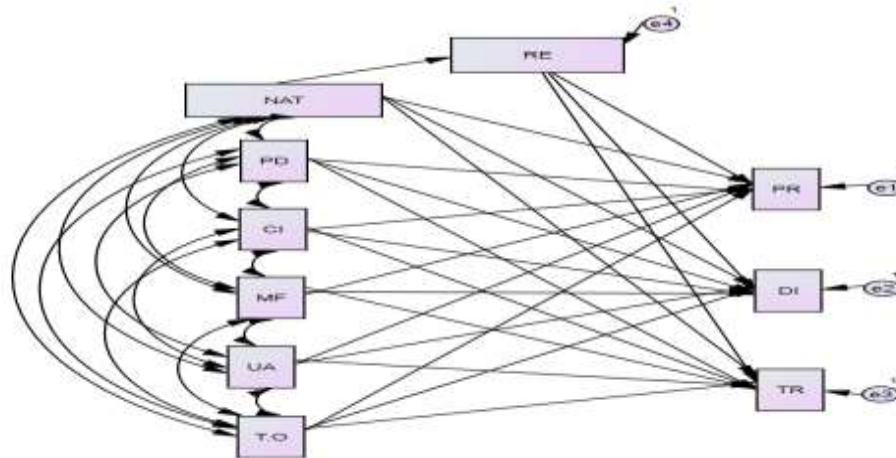
<b>Table 3 THE CORRELATION MATRIX</b>									
Variables	PD	CI	MF	UA	TO	PR	DI	TR	RE
PD	<b>1.000</b>								
CI	.663	<b>1.000</b>							
MF	.292	.299	<b>1.000</b>						
UA	.611	.674	.359	<b>1.000</b>					
TO	.620	.711	.362	.677	<b>1.000</b>				
PR	.661	.593	.170	.625	.668	<b>1.000</b>			
DI	.543	.519	.165	.526	.640	.739	<b>1.000</b>		
TR	.617	.629	.243	.596	.661	.650	.743	<b>1.000</b>	
RE	.470	.480	.337	.616	.616	.536	.412	.420	<b>1.000</b>

## Model fit indices

A good model fit, which can be measured through a set of indices, helps determine the model's ability to reproduce data more accurately. There are four groups of these indicators (absolute, incremental, parsimonious, and predictive) (). MacDonald emphasized that there is an abundance of indices that has been developed as measures of the goodness and it is very easy to invent many more: According to Hair et al., (2019, p641), the increase in indicators of the model goodness leads to weak practices in model specification (as in decreasing the measurement items). While reducing the number of these indicators can improve this specification. The good fit of the study model is achieved through cut-off points for these indicators. In measuring the study model, the indicators of fit of the model were good as follows: Chi-square ( $\chi^2$ ) as an absolute fit indicator was 127.896 and Chi-square to degree of freedom or (CMIN/DF) was between 2.0-5.0 at a significance level ( $p=.000$ ); Goodness-of-fit index (GFI) as an absolute indicator was .888 (closer to cut-off point:  $>.90$ ); the incremental fit index (IFI) as an incremental indicator, was .902 larger than cut-off point ( $>.90$ ), the comparative fit index (CFI) as a ( $0.915 > 0.90$ ), the normed Fit Index (NFI) as a parsimonious indicator was ( $0.910$ ) which is larger than the cutting point ( $> 0.90$ ). These results make sure that the measurement model and its fit indices were supporting the structural model to test the study hypotheses.

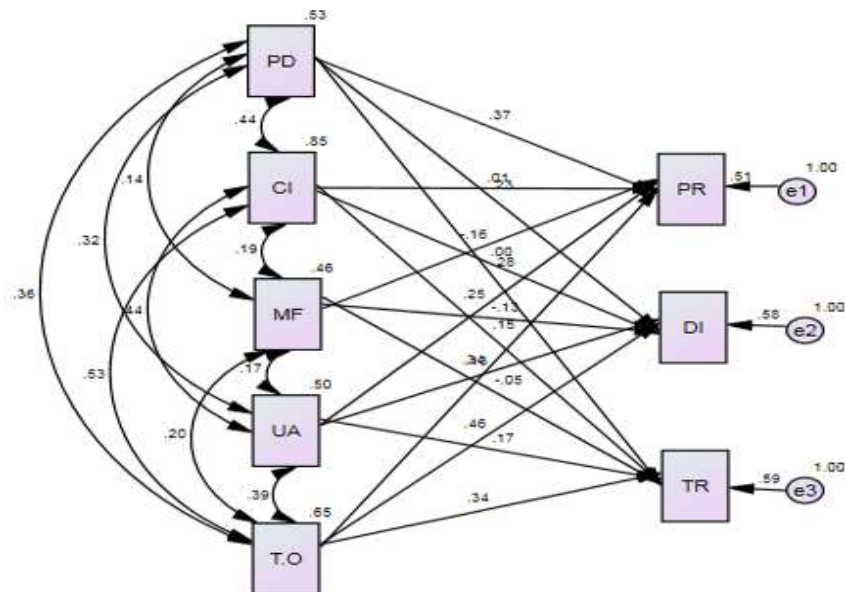
## RESULTS

National culture is the common mixture of thinking and practice among the members of any society. This mixture is manifested in customs, traditions, rituals, and shared values. National culture influences a common pattern of response to any events, problems, or crises that may occur in that society. The great differences in the assessment of countries and societies according to the dimensions of the Hofstede model of national culture, indicates that these societies do not have a single way of responding to the problems that occur. This study is based on the assumption that the national culture, which differs from one society to another, can have a significant impact, positively or negatively, on the response of community members to the COVID-19 pandemic, whether in prevention, diagnosis, and treatment. Three hypotheses ( $H_1$ ,  $H_2$ ,  $H_3$ ) have been tested to determine the direct impact of the dimensions of national culture on the management and control of Covid-19 in the three stages: prevention, diagnosis, and treatment (as shown in Figure 2).



**Figure 2**  
**THE MODEL OF THE HYPOTHESIS TEST**

In the hypothesis test ( $H_1$ ), the results as in figure 3 table 4 confirmed that there is a direct positive effect of three dimensions of national culture: power distance (estimate=.37), uncertainty avoidance (.25) and time orientation (.34) at the significance level ( $p_{\text{value}} < .05$ ) on the prevention of COVID-19. The results also indicated that masculinity had a negative significant effect (-.16) on prevention. While the collectivism had a small and insignificant effect (.01) on pandemic prevention.



**Figure 3: Results of  $H_1$ ,  $H_2$  and  $H_3$**

**Figure 2**  
**RESULTS OF  $H_1$ ,  $H_2$  AND  $H_3$**

In the hypothesis test (H<sub>2</sub>), the results showed that there is a direct positive effect of only two dimensions: the power divergence (estimate=.23), and the time orientation (.46) on the diagnosis of COVID-19 at the significance level ( $p_{value} < .05$ ). These results also showed that masculinity had a significant negative effect (-.13) on the diagnosis. While the two dimensions of collectivism and uncertainty avoidance had no significant effect (-.01 and .13 respectively) at ( $p_{value} > .05$ ) on diagnosis.

In the hypothesis test (H<sub>3</sub>), the results confirmed that there is a direct positive effect of four dimensions of national culture: power divergence (estimate=.29), collectivism (.16), avoidance of uncertainty (.17) and time orientation (.34) on treatment when Significance level ( $p_{value} < .05$ ). Otherwise, masculinity had an insignificant negative effect (-.05) on the treatment.

### Religious dimension: mediating variable

The mediator variable is the third variable that mediates a sequencing relationship between two or more variables (the independent variable and the dependent or construct and outcome) (Hair et al., 2019, p745). The mediating variable is associated with an indirect effect. In this study, In this study, the hypothesis (H<sub>3</sub>), states the impact of the religious dimension as a mediating variable on the relationship between the national culture in all its dimensions (NAT) and Covid-19 in its three stages: prevention (NAT>>PR), diagnosis (NAT>>DI), and treatment (NAT>>TR). Whereas the indirect effect is in the sequencing relationship with the intervention of the religious dimension (RE) as an mediating variable between the national culture and COVID-19 in its three stages: prevention (NAT >> RE >> RE >> PR) and diagnosis (NAT >> RE >> DI), and treatment (NAT>>RE>>TR). In testing the effect of the mediating variable, a three-step model () was used. And then compare the impact of national culture on COVID-19 with its three stages in the two cases: without the mediating variable and with the mediating variable. Figure 3 illustrates this comparison.

Table 4 DIMENSIONS OF NATIONAL CULTURE AND THREE STAGES OF COVID-19						
Hypotheses	Variables	Estimate	SE	CR	P-value	Support
<b>National culture &gt;&gt;&gt; Covid-19 prevention</b>						
H <sub>1</sub>	PD >>> PR	.37	.07	5.44	.000	Yes
	CI >>> PR	.01	.06	.282	.778	No
	MF >>> PR	-.16	.05	-3.14	.002	Yes
	UA >>> PR	.25	.08	2.62	.009	Yes
	TO >>> PR	.34	.07	4.73	.000	Yes
<b>National culture &gt;&gt;&gt; Covid-19 diagnostics</b>						
H <sub>2</sub>	PD >>> DI	.23	.08	3.03	.002	Yes
	CI >>> DI	-.01	.07	-.060	.953	No
	MF >>> DI	-.13	.06	-1.97	0.048	Yes
	UA >>> DI	.13	.09	1.62	.105	No
	TO >>> DI	.46	.08	5.76	.000	Yes
<b>National culture &gt;&gt;&gt; Covid-19 treatment</b>						
H <sub>3</sub>	PD >>> TR	.29	.06	3.69	.000	Yes
	CI >>> TR	.16	.07	2.11	.035	Yes
	MF >>> TR	-.05	.06	-.68	.497	No
	UA >>> TR	.17	.09	2.26	.000	Yes
	TO >>> TR	.34	.08	4.48	.000	Yes

The results of the mediator variable test as in table 5 confirmed that the religious dimension had a different effect in relation to the three stages (prevention, diagnosis, and treatment). It had an indirect effect on the relationship between national culture and prevention (estimate=.65) at the significance level (pvalue <.05). However, this result indicates a decrease in the direct effect of national culture on prevention (NAT>>PR) from .69 to .65 in the indirect causal relationship with the effect of the religious dimension (NAT>>RE >>PR). These results also indicated that the national culture had a positive direct effect on the diagnosis (NAT >> DI) at the significance level, but with the intervention of the mediating variable, the indirect effect of the religious dimension on the relationship between national culture and diagnosis (NAY>>RE>>DI) had decreased from .61 to .58 and was not significant (pvalue >.05), i.e. reject the alternative hypothesis and accept the null hypothesis.

Finally, the religious dimension as a mediator variable had a positive and significant effect on the relationship of national culture and treatment, as the estimate value increased from (.70) in the direct relationship between national culture and treatment (NAT>>TR) to (.72) in the indirect succession relationship (NAT>>RE) >>TR) in the sense of rejecting the null hypothesis and accepting the alternative hypothesis. In conclusion, the religious dimension did not have a specific pattern of influence in the three phases of management and control of COVID-19 (prevention, diagnosis, and treatment). This effect was different in the three stages, ranging from a significant positive effect on treatment, a significant but decreasing effect on prevention, to an insignificant effect on diagnosis.

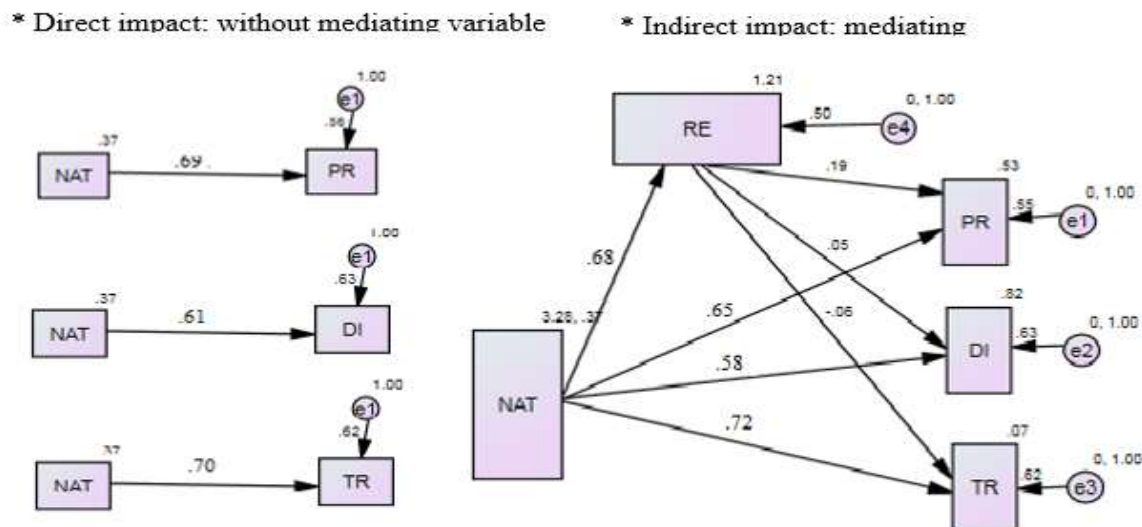


Figure 3: Impact national culture on Covid-19 stages in two cases

Figure 3  
IMPACT NATIONAL CULTURE ON COVID-19 STAGES IN TWO CASES

Table 5  
THREE STEPS OF MEDIATING VARIABLE TEST

Steps	Variables	Estimate	SE	P-value	Support
- National culture (NAT) >>> religious dimension (RE) >>> Covid-19 prevention (PR)					
1	NAT >>> PR	.69	.07	.000	Yes
2	NAT >>> RE	.68	.06	.000	
3	NAT and RE >>> PR	.65	.07	.010	
- National culture (NC) >>> religious dimension (RE) >>> Covid-19 diagnostics (DI)					
1	NAT >>> DI	.61	.09	.000	No
2	NAT >>> RE	.68	.06	.000	
3	NAT and RE >>> DI	.58	.08	.594	
- National culture (NC) >>> religious dimension (RE) >>> Covid-19 treatment (TR)					
1	NAT >>> TR	.70	.09	.000	Yes
2	NAT >>> RE	.68	.06	.000	
3	NAT and RE >>> TR	.72	.06	.000	

## CONCLUSION AND DISCUSSION

Hofstede's model emphasized that the dimensions of national cultures differ greatly from one country to another. This difference affects the members of a national group and the way they think and respond to different events. This study did not focus on the comparison between different cultures, but rather focused on the dimensions of national culture in Jordan and its impact on three phases of COVID-19. The high collectivism that is characterized by social closeness and the daily inter-relationships between the members of the collective, can lead to an acceleration of the outbreak of the pandemic among the members of the group. While, individualism, where the concept of the ego and the priority of the individual and the family over broader groups (clan, tribe, professional and functional groups), can contribute to supporting Strengthening social distancing as an effective means of prevention in this highly contagious pandemic. Hofstede pointed out that difference in national culture lead to differences in their effect on the outcome of different events. Cao et al. (2020) also emphasized that cultural factors account for a large proportion of the explanatory power of differences in Covid-19 containment across countries. Oey & Rahardjo (2021), which included a sample of 116 countries, showed that there are six national groups that have different ways of dealing with Covid-19, driven by its dominant cultural dimensions. In the same context, we find that Hofstede (2011) objected to some who said that modern technologies lead to erasing the diversity of cultures, as there is not the slightest evidence of similarity in cultures. The variation in the number of deaths and injuries in the Covid-19 pandemic, according to the statistics of the World Health Organization, confirms that national cultures play a role in methods of prevention, diagnosis and treatment in this pandemic.

The results of this study confirmed that four dimensions of national culture (power distance, uncertainty avoidance, and time orientation) had a significant positive effect on prevention ( $H_1$ ) and diagnosis ( $H_2$ ) of Covid-19, while collectivism did not have a significant effect on prevention and diagnosis. With regard to prevention, this result can be explained by the fact that government authorities at the beginning of 2020 issued strict instructions related to stopping work, quarantine, social distancing, and wearing masks, which helped improve prevention. Also, avoiding the uncertainty and risks associated with the pandemic contributed to the application of preventive measures. However, high collectivization led to many wrongdoings displaying violators to legal accountability. The high risk of Covid-19 is rapid infection. For this reason, quarantine, work stoppage, and social distancing were necessary measures, but the



collective as a tendency to relationships and group activities such as parties had a negative impact on prevention due to mixing and on diagnosis due to avoiding medical checking and not detecting infection.

This result (no significant effect of collectivism) is consistent with Cao et al. (2020), which confirmed that cultural dimensions have a cost due to their impact on the containment efforts, because changing the culture in order to save individuals from increasing rates of infection and death requires a behavioral change that is not achieved in the short term. However, this result is not consistent with Oey and Rahardjo 's study (2021), which confirmed that countries with collective culture are better off than countries with individual culture in containing the pandemic, yet the study itself stipulated that collective culture can achieve a result best if accompanied by restraint and long-term orientation. Jordanian culture is characterized by a short time orientation, as we mentioned, and many incidents revealed lack of restraint in social relations, for example, at a wedding party in the city of Irbid in March 2020, 85 injuries were recorded due to lack of self-control (arabic.cnn.com). Regarding to the treatment of Covid-19, the results of Table 5 showed that four dimensions of national culture were supported and had a positive effect at significant level ( $p_{\text{value}} < 0.05$ ) on the treatment, while a single dimension (masculinity) was not supported, which had an insignificant effect on the treatment. This result confirmed that the degree of masculinity (as the paragraphs of the questionnaire were focused on masculinity) did not rely more on the treatment, so the effect of masculinity was not significant with regard to treatment. Ganesh & Paramasivam (2014), confirmed that masculinity had no significant effect on the quality of working life in India. According to Hofstede's insight, the evaluation of India in the masculinity dimension was (56) close to that of Jordan (46). In the mediation analysis, the results of hypothesis testing () as in Table showed that the religious dimension has a significant positive effect on the relationship between the five dimensions of national culture and the two stages: prevention and treatment. While it had no significant effect on the stage of diagnosis. In explaining the positive impact of the religious dimension on prevention and treatment, many previous studies confirmed the increasing importance of religion in times of crisis. Individuals tend to get close to religion in times of crisis (according to Gogol searches, the demand for prayer topics has increased in circumstances after the World Health Organization declared the Covid-19 pandemic in March 2020) (Bentzen, 2021). Religious individuals are more calm and less depressing and anxious during these periods (McCullough, & Larson, 1999). These conclusions apply to Muslims who find religion as a source of reassurance and has a buffer effect against stress and fear in the event of diseases (Lorenz et al., 2019) or pandemic conditions (Bozewicz & Boguszewski, 2021) This explains the positive impact of the religious dimension on prevention and treatment.

In this analysis also, the religious dimension had no significant effect on the relationship between national culture and diagnosis. This result can be explained by being careful of the diagnosis when there is no actual need for a health examination for fear of Covid-19 infection. Also, all hospitals have issued brochures and posters related to the main symptoms of Covid-19, and because the sample members are from the health staff, who are more knowledgeable and experienced in these symptoms, so the religious dimension had no significant impact on the relationship between national culture and diagnosis.

## Implications and Limitations

This study has shed a great light on the impact of national culture on the most dangerous health pandemic that has passed in our modern world. It also identified three phases of this pandemic: prevention, diagnosis, and treatment to help future studies of Covid-19. The study highlighted the importance of religion in periods of crises, disasters, and epidemics that are highly contagious with their many variants such as The Kent variant, or B117, the B.1.617 variant in the UK and The Delta Plus, or Delta-AY.1 variant. The Covid-19 pandemic still represents a serious challenge whose serious effects extend to all continents and countries, so the impact of national culture on the management and control of this pandemic in other regions and countries highlights an academic and practical need to compare them according to the dimensions of national culture of the Hofstede model. The study of the causal relationship between national culture and Covid-19 in hospitals, can be completed by studying this relationship in other sectors such as universities and banks in order to compare the results of these studies in different sectors. Future studies can use other international models of national culture, such as the Globe Project (House, 2004); Schwartz, 1992, 2006 to provide useful comparisons between the results of this study and the results of studying other models and the impact of their different dimensions on Covid-19. The religious dimension neglected by Hofstede's model still represents a challenge to this model, as well as a scientific need for future studies, whether in the field of study or in other fields.

This study encountered some limitations related to the difficulty of distributing questionnaires in periods of the pandemic due to the quarantine, business interruption and social distancing, which was reflected in the difficult and dangerous conditions in which the hospitals were working.

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