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Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_132_21

Psychological stress and its relation to social distancing among a sample of Saudi during COVID-19 pandemic

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Abstract:

BACKGROUND: Over the last year, the world has witnessed an infectious disease (COVID-19) outbreak that has shown a high rate of spread. Therefore, several prevention and mitigation measures have been imposed to control the spread of the virus worldwide. The aim of the current study is to identify the commitment level to social distancing and its relationship to psychological stress among members of Saudi society during COVID-19 pandemic.

MATERIALS AND METHODS: The descriptive correlational design was employed in the current study, and the sample of the study consisted of 536 Saudis selected using convenient sampling method. The study was conducted in four cities in Saudi Arabia (Altayef, Mecca, and Najran, in 2020 during COVID-19 pandemic using quantitative survey method. Several analysis methods using SPSS software were used to analyze the data such as mean and standard deviation, three-way ANOVA, Scheffe's test, and Pearson correlation.

RESULTS: The study revealed that the psychological stress and commitment level to social distancing by the study sample during COVID-19 pandemic was moderate, and differences were observed among the study variables. Furthermore, the study revealed a statistically significant negative correlation between the commitment level to social distancing and the exposure to psychological pressures.

CONCLUSION: The study contributed to literature by developing a model to enhance the importance of social distancing of people during COVID-19 pandemic. The study recommends the necessity to provide advice and counseling services that enhance community members' awareness about the application of social distancing during COVID-19 pandemic.,

Keywords:

COVID-19, individual variables, indoor distancing, outdoor distancing, psychological pressure, Saudi community, social distancing

Introduction

On February 11, the World Health Organization (WHO) declared that COVID-2019 is the cause of respiratory infection. According to the WHO, over the past years, viral diseases are among the most serious public health issues. On December 31, 2019, cases of severe respiratory infections were reported in China, specifically in Hubei Province in

Wuhan, by the Chinese Center for Disease Control and Prevention (CDC) and the local CDC, which stated that the cause of the outbreak is due to a new strain of coronavirus.^[1] With the increasing number of infections in China and most countries of the world, the WHO has classified, on March 11, 2020, COVID-2019 as a pandemic, as the number of infections reached more than 700,000 cases, with more than (35,000) death cases.^[2] In order to prevent the outbreak of the novel coronavirus (COVID-19), governments over the globe declared an

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How to cite this article: Alzwain F, Bashatwa M, Hamadneh B. Psychological stress and its relation to social distancing among a sample of Saudi during COVID-19 pandemic. *J Edu Health Promot* 2021;10:281.

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Received: 28-01-2021
Accepted: 21-02-2021
Published: 30-07-2021

extreme state of emergency, including the Kingdom of Saudi Arabia, as a set of firm disciplinary measures were taken to prevent its outbreak, such as stopping all economic, commercial, social, and sports activities; air and transportation traffic shutdown; the commitment to social distancing inside and outside houses; and imposing the health mandatory quarantine, whether in home or hospital.^[3]

Social distancing can be defined as an avoidance of gatherings and physical contact with others. Health experts considered it a critical measure to minimize the morbidity rates of the virus, avoid overburdening health-care systems, and even protect them from potential collapse in the event of unbearable high infection rates. Despite its importance, social distancing may be accompanied by some downsides, such as feelings of loneliness, anxiety, fear, nervousness, anger, frustration, sadness, and boredom (especially for quarantined individuals), and decreased levels of direct interaction and productivity as a result of the changes in the surrounding environment.^[4] The term “stress” is a general concept that includes several aspects, represented by stimuli resulting from stressful reactions. It also includes several physiological, psychological, and social phenomena.^[5] Psychological stress refers to the relationship between an individual and his/her environment, resulting from his/her attempts to control the internal and external aspects which are viewed as an interpretative paradigm between the stressors and the individual’s psychological reactions.^[6] Psychological stress may cause significant problems for an individual, including behavioral effects (e.g., a difficulty in sleeping, addiction to sedative drugs, heavy smoking, loss of appetite, acts of sabotage, and rebelling against the regulation), and emotional effects (e.g., feeling frustrated and depressed, losing hope, acting nervous, hypersensitivity to criticism, difficulty in speaking and expressing thoughts and feelings, and mood swings), and physical effects (e.g., nervous tension, high blood pressure and blood sugar, bloodshot eyes, chronic headache, suffering from acute stomach ulcers, and irritation of the colon).^[7] No doubt, it is difficult to control stress, but it can be addressed through defining methods of adaptation used to control psychological pressures. Therefore, due to the current circumstances and conditions witnessed by the world (in general) and the Kingdom of Saudi Arabia (in particular) as a result of COVID-19 pandemic; the subsequent measures of social distancing; and individuals’ inability to adapt to conditions of isolation, tension, and loneliness, the current study sought to identify the commitment level to social distancing among a sample of Saudis and its relationship to their psychological stress during COVID-19 pandemic.

More specifically, this study attempts to answer the following questions:

1. What is the commitment level to social distancing during COVID-19 pandemic among a sample of Saudis?
2. Are there statistically significant differences in the commitment level to social distancing among a sample of Saudis during COVID-19 pandemic, due to gender, age, and scientific qualification?
3. What are the psychological stresses resulting from COVID-19 pandemic among a sample of Saudis?
4. Are there statistically significant differences in the psychological stresses caused by COVID-19 pandemic among a sample of Saudis, due to gender, age, and scientific qualification?
5. Is there a statistically significant correlation between the commitment level to social distancing and psychological stress among a sample of Saudis during COVID-19 pandemic?

Materials and Methods

Study design and setting

The descriptive correlational design was employed in the current study. This design is suitable for the nature of the study for data collection about the status quo of social distancing and psychological stress during COVID-19 pandemic (descriptive design). Furthermore, the correlational design was employed to identify the nature of the correlation between the two variables of the study (social distancing and psychological stress). Quantitative method was used in this study because it enables the researcher to get views and attitudes of the respondents to the social phenomenon under study.^[8,9]

Study participants and sampling

The population of the study included all members of the Saudi society in the year 2020. As for the sample of the study, this was 536 Saudis selected using random convenient sampling method from the Saudi society at Altaif, Mecca, and Najran, as they agreed to participate in the study. Of the 536 respondents, 250 were male and 286 were female. Two hundred and thirty-three respondents’ age was <30 years, 120 – 30–40 years, 104 – between 41 and 50 years, and 79 – >50 years. In terms of their academic qualification, 80 respondents had less than secondary degree, 271 had bachelor’s degree, and 185 had higher education degree.

Ethical consideration

The study followed the ethical guidelines provided by the Taif University Ethics Committee. Proper permissions (1-441-30) were obtained from all the participants. In addition, participants were informed that their answers would be used for research purpose only and would never be seen or used by others.

Data collection tools and technique

Before conducting the study, the necessary agreements for the study were conducted from the scientific council at the university, and the scales were administrated via the Internet to the targeted sample using convenient sampling from the different geographical regions in the Kingdom of Saudi Arabia after it was prepared electronically using Google Drive. The link for accessing the study instruments was sent to the sample of the study using WhatsApp. The study employed the following instruments for data collection from the sample of the study. This included the Social Distancing Scale which was constructed based on a thorough review of related literature and previous studies. The scale consisted of 23 items distributing on 2 dimensions: indoor spatial distancing (10 items) and outdoor spatial distancing (13 items). Three-point Likert scoring (always = 2, sometimes = 1, and never = 0) was used for scoring the scale. The validity of the Social Distancing Scale was checked in the preliminary format by a panel of 10 experts in psychology, social psychology and evaluation, and measurement experts in the Saudi universities. These were asked to give their remarks about the content of items, wording clarity, and the ability of the scale to achieve the objectives of the study. The reliability of the scale was verified by calculating internal consistency coefficients (Cronbach's alpha). In doing so, the scale was administrated to a pilot sample selected out of the original sample and consisted of 40 subjects. Reliability coefficients for the total scale and the individual domains were calculated; the total reliability coefficient for the Social Distancing Scale was 0.90, indoor social distancing was 0.87, and outdoor social distancing was 0.90, respectively.

Psychological Stress Scale

The scale was developed after the researcher conducted a comprehensive review of related literature and previous studies. The scale was included in the preliminary format (32 items) distributing on 4 dimensions: behavioral (8 items), cognitive (8 items), emotional

(9 items), and physical (7 items). Three-point Likert scoring (always = 2, sometimes = 1, and never = 0) was used for scoring the scale. The validity of the Social Distancing Scale was checked in the preliminary format by a panel of 10 experts in psychology, social psychology and evaluation, and measurement experts in the Saudi universities. These were asked to give their remarks about the content of items, wording clarity, and the ability of the scale to achieve the objectives of the study. The Cronbach's α (Cronbach's alpha) for psychological stress scale was (0.96), behavioral (Cronbach's α = 0.83), cognitive (Cronbach's α = 0.93), emotional (Cronbach's α = 0.87), and physical dimension was (Cronbach's α = 0.96).

Results

To answer the first question which is What is the commitment level to social distancing during COVID-19 pandemic among a sample of Saudis? The Means and standard deviation (SD) values of the participants had moderate commitment level of social distancing during COVID-19 pandemic (M = 1.33, SD = 0.35). In terms of indoor social distancing, the result showed that the mean score was 1.17 (SD = 0.45), with a moderate level, and for outdoor social distancing dimension level, the result showed that the mean score was 1.45 (SD = 0.38), with a high level [Table 1].

To answer the second question, means and SD for the commitment level of social distancing during COVID-19 pandemic were calculated. The results show differences between the mean scores for the commitment level of social distancing during COVID-19 pandemic among Saudis in light of gender, age, and scientific qualification.

The results were compared the differences between the gender, age, and educational qualification groups in the commitment level of social distancing and its subscales, and it was insignificant on commitment level of social distancing (MS = 0.206, F = 1.996, P = 0.158 > 0.05), insignificant on indoor social distancing (MS = 0.119,

Table 1: Mean and standard deviation on the psychological stress, age, gender, and qualification

Variable	Gender	n	Behavioral		Cognitive		Emotional		Physical		Total	
			Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Gender	Male	250	0.72	0.49	0.76	0.61	0.72	0.57	0.63	0.54	0.71	0.47
	Female	286	0.75	0.40	0.86	0.50	0.86	0.52	0.81	0.52	0.82	0.43
Age	<30	233	0.70	0.43	0.75	0.53	0.72	0.53	0.67	0.48	0.71	0.44
	30-40	120	0.72	0.36	0.83	0.51	0.85	0.48	0.68	0.59	0.78	0.39
	41-50	104	0.82	0.51	0.88	0.59	0.87	0.55	0.82	0.55	0.85	0.49
	More than 50	79	0.75	0.49	0.88	0.63	0.84	0.63	0.83	0.59	0.83	0.52
Qualification	Secondary or less	80	0.83	0.51	0.99	0.64	1.09	0.64	0.96	0.64	0.97	0.56
	BA	271	0.72	0.43	0.77	0.52	0.73	0.49	0.67	0.45	0.72	0.40
	Higher education	185	0.72	0.43	0.79	0.56	0.76	0.53	0.70	0.59	0.75	0.47

SD=Standard deviation

$F = 0.895, P = 0.344 > 0.05$), and insignificant on outdoor social distancing ($MS = 0.355, F = 2.288, P = 0.131 > 0.05$) due to gender levels. Significant differences were observed among age groups on the differences at $\alpha = 0.05$ in the commitment level of social distancing total score ($MS = 2.881, F = 9.310, P = 0.000 < 0.05$), significant on indoor social distancing ($MS = 5.937, F = 12.796, P = 0.000 < 0.05$), and significant on outdoor social distancing ($MS = 1.734, F = 4.355, P = 0.005 < 0.05$). Participants from group 3 (41-50 years) had a significantly higher mean score of commitment to social distancing than other age groups. There were also statistically significant differences due to qualification in the commitment level of social distancing total score ($MS = 4.228, F = 20.492, P = 0.000 < 0.05$), significant on indoor social distancing ($MS = 9.921, F = 32.007, P = 0.000 < 0.05$), and significant on outdoor social distancing ($MS = 1.734, F = 4.355, P = 0.004 > 0.05$) between secondary school or less and BA, in favor of BA, and between secondary school or less and higher education, in favor of higher education.

To answer the third question, the results of means and SD for psychological stresses resulting from COVID-19 pandemic indicated that the total score of the stress and its dimensions during COVID-19 pandemic were moderate (stress, $M = 0.77, SD = 0.45$), cognitive dimension ($M = 0.82, SD = 0.56$), emotional dimension ($M = 0.80, SD = 0.55$), behavioral dimension ($M = 0.74, SD = 0.44$) with a moderate level, while physical dimension ($M = 0.73, SD = 0.54$).

To answer the fourth question, descriptive statistics were used and differences between the mean scores of the psychological stresses caused by COVID-19 pandemic among Saudis were observed due to gender, age, and scientific qualification. Three-way ANOVA analysis shows statistically significant differences at $\alpha = 0.05$ in the total score of psychological stresses caused by COVID-19 due to gender, in favor of females ($MS = 1.211, F = 6.271, P = 0.013 < 0.05$). The results also indicated statistically significant differences at $\alpha = 0.05$ in the total score of psychological stresses due to qualification ($MS = 1.699,$

$F = 4.399, P = 0.013 < 0.05$. Finally, no statistically significant differences were found due to age ($MS = 0.533, F = 0.920, P = 0.431 > 0.05$). To identify the significant differences in the psychological stresses level due to qualification, Schaeffe's test for *post hoc* comparisons was employed, as shown in Table 2, which indicates that there were statistically significant differences at $\alpha = 0.05$ on the total score of psychological stresses and the individual dimensions of the construct (behavioral, cognitive, emotional, and physical) due to qualification between secondary school or less and BA, in favor of secondary school or less. There were also statistically significant differences between secondary school or less and higher education, in favor of secondary school or less. The results indicated that school students significantly higher mean score of psychological stress compared to students with higher educational degree. participants with higher educational degree.

To answer the fifth question, Is there a statistically significant correlation between the commitment level to social distancing and psychological stress among a sample of Saudis during COVID-19 pandemic? Pearson correlation coefficients were calculated between the commitment level to social distancing and psychological stress and a significant negative correlation was observed, as presented in Table 3.

Discussion

The results of the first question of the study concerning the commitment level of social distancing during COVID-19 among Saudis were moderate. This result may be due to the outcomes of the reports issued by the WHO since March 2020 detailing the preventive measures that individuals can take against the spread of the virus. These reports emphasized the importance of social distancing as one of the most effective safety measures preventing COVID-19 infection. Researchers^[10] also indicated that social distancing is a good strategy to prevent the spread of COVID19, since most of the people are infected through coming into contact with people who are coughing and sneezing.

Table 2: Comparisons *post hoc* test of the respondents qualifications of the psychological stress

Dimension	Qualification (I)	Qualification (J)	Means difference	Significance
Behavioral	Secondary school or less	BA	0.117*	0.040<0.05
		Higher education	0.105**	0.000<0.001
Cognitive	Secondary school or less	BA	0.213*	0.003<0.05
		Higher education	0.193*	0.010<0.05
Emotional	Secondary school or less	BA	0.357**	0.000<0.001
		Higher education	0.324**	0.000<0.001
Physical	Secondary school or less	BA	0.290**	0.000<0.001
		Higher education	0.264**	0.000<0.001
Total	Secondary school or less	BA	0.247**	0.000<0.001
		Higher education	0.225**	0.000<0.001

Table 3: The relationship between social distancing and psychological stress

Variables	Psychological stress
Social distancing	
Pearson coefficients	-0.470** (.000)
Significance	<0.001
<i>n</i>	536

Furthermore, the Saudi ministries have issued from March 2020 awareness promotion brochures and reports about the hazards related to COVID-19. They have emphasized for individual to follow strict social distancing measures-indoor and outdoor, and other procedures such as wearing facemask and gloves, avoiding handshaking and using sterilizers during COVID-19 pandemic.

The results also indicated no statistically significant differences in the commitment level of social distancing during COVID-19 due to gender. This result is attributed to the Ministry of Health efforts and affirms the fact that both males and females at Najran and Altaif regions are equally aware of the importance of social distancing as a preventive measure against COVID-19. In addition, statistically significant differences were found in the total score for commitment level of social distancing due to age and education qualification groups. This result may be explained by the fact that the cognitive maturity and awareness of the COVID-19 virus and its related information among these groups may be higher compared to other groups and that leads them to maintain more level of social distancing as well as higher commitment level of social distancing. The results also indicated that the participants has moderate level of the psychological stresses caused by COVID-19, and this applies to the individual dimensions of the psychological stresses; this result may be explained by that Saudis face many stressors during COVID-19 such as cognitive, behavioral, and physical and emotional issues (lack of concentration, impulsivity in doing things, feeling exhausted, and fatigue and anxiety).

The results found that there are statistically significant differences in the psychological stress level caused by COVID-19 due to gender and academic qualification (in favor of females and secondary school or less) but not for age groups. This result may be due to that males can overcome their stress by going outdoor which reduces their psychological stress unlike women. School students' age is also more influenced by the COVID-19 stress as this group cannot employ effective stress management strategies, especially during crisis. On the other hand, no different between age groups were observed as they are aware of the hazards of COVID-19. Also a negative correlation between the level of social distancing commitment and psychological

stress among Saudis during COVID-19 was seen, may be due to that the negative effects resulting from social distancing as a response to COVID-19. The main concern is that social distancing may increase the psychological negative effects for those who are really experiencing loneliness and isolation. This makes it necessary to call people to increase their knowledge about COVID-19^[11-13] and to communicate with other society members using distance communication tools to help others overcome the stress experienced during COVID-19.

Limitations and suggestions

In view of the findings, the study recommends the necessity to ensure commitment to social distancing. The study also recommends that the institutions to provide health and social care and counseling services concentrating on how to appropriately address such psychological stresses. For example, sending text messages, enhancing awareness about COVID-19 risks and commitment to social distancing, and used e-health platforms to raise the awareness among Saudis about the risks of COVID-19, the preventive methods and how to properly apply social distancing. Social workers and psychologists should be aware of their key role in limiting the psychological and social effects of the COVID-19 pandemic by activating, at the local level, family training, and development programs, aiming to raise awareness among community individuals regarding the appropriate preventative measures against this disease.

Conclusion

This study's main objective is to highlight the commitment level of social distancing among people during COVID-19 pandemic. The results showed that the participants had a moderate level of commitment to social distancing. Furthermore, results showed that male and female participants had the same social distancing commitment levels. The results also supporting that people from different age groups need to commit to social distancing and both activities indoor and outdoor social distancing. Finally, people are having different perceptions in terms of committing to social distancing and indoor/outdoor activities and their perceptions are based on their educational qualifications. Thus, the study minimizes the literature gap by specifically investigating the study focus and by developing a model to enhance the importance of social distancing of people during COVID-19 pandemic, and further studies are needed to include other factors.

Acknowledgment

The authors would like to thank those people who participate in this study. Special thanks also to Scientific Research Deanship at Taif University for supporting this study.

Financial support and sponsorship

This research was funded by the Scientific Research Deanship at Taif University under Project No. 1-441-30.

Conflicts of interest

There is no conflicts of interest.

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