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Original Article

Adherence to Physical Distance and Mask Wearing from Civil Servant's Viewpoints during COVID-19 Pandemic, between the 2nd and 3rd Peaks in Southern Iran, 2020: An Online-based Survey

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Abstract

Introduction: COVID-19 rapidly spread globally. Until now, no effective treatment has been provided. Thus, preventive activities such as mask-wearing and social distancing are a priority. This study aimed to measure mask wearing and physical distance adherence after the second wave of COVID-19.

Methods: In this Web-based survey, 1100 staff members participated. We used an online platforms called *Porsline* for data collection. Online data included demographic characteristics and staff member's viewpoints about mask wearing and physical distance in their communities. Data were analyzed using descriptive statistics and Pearson's correlation test.

Results: Finally, 1100 participants (584 men) aged 23-66 years filled out the questionnaire. Most of them believed that mask wearing was increased in the community, but with a variety in different places. The lowest percentage of increasing mask wearing was in the park (67.1%) and the highest percentage was among people referring to government offices (86.1%). The lowest percentage in increasing adherence to physical distance was among users of private cars (56.3%) and the highest percentage was among civil servants (74.8%). Physical distance was also increased, although less than wearing a mask.

Conclusion: Although mask wearing and adherence to physical distance in community have increased, they have not been developed. On the other hand, it seems that the heath system should pay more attention to physical distance.

Keywords: Civil servants, COVID-19, Pandemic, Wearing-mask, Physical distance

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Introduction

SARS-COV-2 named COVID-19 virus, leading to severe acute respiratory syndrome, is the second epidemic of the 21st century that appeared in China and spread rapidly around the world (1). It is more contagious in comparison with other infectious diseases such as SARS and influenza H1N1. Unlike SARS, which generally manifests with high fever, acute pneumonia and with a mortality of about 10%, COVID-19 can be diagnosed with much mild symptoms and with a mortality of less than 4%. Therefore, non-clinical or asymptomatic COVID-19 castors may play an important role in continuation of the epidemic (2, 3). One of the first measures was taken in China and other countries was quarantining people to cut off the transmission chain. In addition, non-pharmacological health interventions such as controlling or closure of borders, quarantining, screening test of all incoming or outgoing passengers across borders, rapid tracking of contacts, washing hands frequently, and adherence to physical distance including avoiding crowds and staying away from others for at least 6 feet (4, 5). During the COVID-19 pandemic, there were various recommendations for the wearing of face masks by the general public that has been controversial. Since April 3, 2020, the US Centers for Disease Control and Prevention (CDC) has recommended the wearing of cloth masks, but

public mask wearing has been more common in many Asian countries. Studies suggested that adherence to physical distance and masks wearing might be somewhat helpful in limitation of the spread of the virus in the community (6, 7).

Adherence to physical distance and wearing mask have been suggested to limit the transmission of the disease by asymptomatic or pre-symptomatic carriers, which may be the main cause of COVID-19 transmission. Many studies show that masks may protect a person against various infections (8, 9). We supposed adherence to physical distance and wearing mask in the community might break the COVID-19 transmission chain by reducing subclinical viral infection (10). Beginning an earlier lock down, such as school and university closures, canceling all public gatherings, staying at home, avoiding crowds, and staying at least 6 feet away from others, closing the stores that did not sell people's essential goods, reducing physical attendance of employees in offices and teleworking, etc. Due to the fact that changes in the trend of adherence to physical distance and mask wearing have not been investigated during the COVID 19 pandemic in Iran, we performed a study to investigate civil servant's viewpoints about adherence to physical distance and mask wearing among themselves and in the community.

Method and Materials

Design

This is a web-based cross-sectional study carried out among civil servants between the 2nd and 3rd peaks in southern Iran, 2020:

Data Collection and Participants

Using cellphone numbers, we selected 1,100 staff members by simple random sampling. Data were collected using electronic form via *Porsline* (a domestic online survey platform) that was made by researcher. Platforms such as Telegram, WhatsApp, and Instagram were required for participants. Staff members were directed to complete the online questionnaire.

Sample Size Estimation

The sample size was estimated with 95% confidence interval z=1.96, P=0.5 (according to various studies in different places where mask wearing, adherence to health protocols, and physical distance was 50%) (11), and marginal error=0.05; the sample size was obtained 384, but as we wanted both male and female staff, and we were going to take sample from various cities. We considered the design effect to be about 2.5. As a result, the sample size was estimated 1100 staff members.

The Study form for Data Collection

The questionnaire included demographical questions and civil servant's viewpoints on changing people's behavior questions about mask-wearing and adherence to physical distance in public places, such as offices, shops, streets, and parks. A Web-based form was designed and a link was sent to the participants. They were free to fill out the questionnaire or not.

Ethical Consideration

This study was reviewed and approved by the Research Review Board of the Ethics Committee of Shiraz University of Medical Sciences (Code: IR.SUMS.REC.1399.792) The questionnaires were anonymous and without any other identification information.

Statistical Analysis

Descriptive statistics were used for description of data. Pearson correlation test was used for analysis. The statistical analysis was performed using SPSS for Windows, Version 16.0. Chicago, SPSS Inc. We opted P values less than 0.05 as the statistically significant level.

Results

1100 staff members participated in the study and 1050 of them completed the survey. The response rate was 95.5%. The age range was from 23 to 66 years. 584 subjects (55.6%) were male and 466 subjects (44.3%) were female. Their mean age was 39.18±7.52. 1.5% of the subjects were top managements, 12.5% middle managements, 35.7% experts, and 50.3% were office clerks and service workers.

Most of staff members believed wearing mask and adhering to physical distance were increased in the community. Table 1 shows the frequency and percentage of changes in mask wearing from civil servant's viewpoints in public places in the last two months. According to the staff members' views, the highest percentage of increase in wearing mask was among people referring to government offices (86.1%) and the lowest percentage was in the park (67.1%).

The highest percentage of decrease in mask wearing was among people using private car (13.8%) and the lowest people referring to clinics, hospitals and health centers (4.9%). The lowest mean of percentage of changes in mask wearing was among people in parks (43.21±44.67) and the highest mean of percentage of changes was among people referring

Table 1: The frequency and percentage of changes in Mask-wearing from civil servant's viewpoints in public places in the last two month

Places ,staff and people	Type of changes				Mean percentage of reporting of changes (%)	Mean percentage of currently wearing mask (%)
	Increased frequency (%)	Without changing frequency(%)	Decreased frequency (%)	I don't know frequency (%)		
Civil servants	884 (84.2)	39 (3.7)	94 (9.0)	33 (3.1)	54.75±43.44	90.46±18.02
People referring to government offices	904 (86.1)	46 (4.4)	78 (7.4)	22 (2.1)	57.45±41.43	85.41±18.29
Physicians and staff members of clinics , hospitals and health centers	843 (80.3)	5 (0.5)	111 (10.6)	91 (8.7)	63.95±47.98	89.91±26.77
People referring clinics , hospitals and health centers	894 (85.1)	20 (1.9)	51 (4.9)	85 (8.1)	64.72±43.20	84.92±26.58
Staff members of department stores	810 (77.1)	47(4.5)	129 (12.3)	64 (6.1)	52.25±47.35	79.22±26.26
People referring to department stores	829 (79.0)	57 (5.4)	94 (9.0)	70 (6.6)	70.01±41.96	76.69±26.51
staff members of Small shops	769 (73.2)	73 (7.0)	130 (12.4)	78 (7.4)	48.54±45.47	71.89±27.20
People referring to Small shops	807 (76.9)	69 (6.6)	113 (10.8)	61 (5.8)	50.48±44.15	72.84±26.40
Drivers of public transportation	783 (74.6)	36 (3.4)	106 (10.1)	125 (11.9)	52.77±46.17	72.15±31.47
People using public transportation	816 (77.7)	39 (3.7)	76 (7.2)	119 (11.3)	55.26±43.35	72.95±31.39
People using private car	763 (72.7)	66 (6.3)	145 (13.8)	76 (7.2)	45.51±46.00	65.83±34.67
People in Parks	705 (67.1)	78 (7.4)	110 (10.5)	157 (15.0)	43.21±44.67	61.56±32.96
People in Street	844 (80.4)	71 (6.8)	87 (8.3)	48 (4.6)	51.22±41.41	72.40±24.67

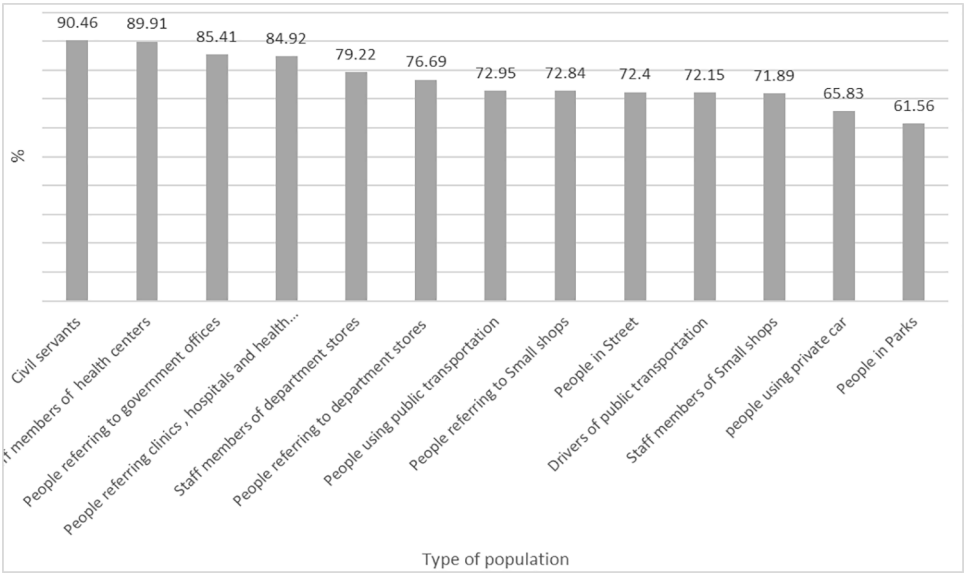

Figure 1: Mean percentage of Currently wearing mask (%) from civil servant's viewpoints in public places in the last two month

to department stores (70.01±41.96). The lowest mean of the percentage of currently wearing mask was 61.56±32.96 in the parks and the highest mean of percentage was 90.46±18.02 among civil servants (Table 1 and Figure 1).

Table 2 displays the frequency and percentage of changes in adherence to physical distance from civil servant's viewpoints in public places in the last two months. According to staff member's viewpoints, civil servants had the highest percentage (74.8%), and people in private car had the lowest percent (56.3%) of increasing change in adherence to physical distance.

The lowest and highest percentages of reduction in adherence to physical distance were among physicians

Table 2: The frequency and percentage of changes in adherence to physical distance from civil servant's viewpoints in public places in the last two months

Places, staff and people	Type of changes				Mean percentage of reporting changes	Mean percentage of Currently adherence to physical distance
	Increased frequency (%)	Without changing frequency (%)	Decreased frequency(%)	I don't know frequency(%)		
Civil servants	785 (74.8)	56 (5.3)	182 (17.3)	27 (2.6)	45.48±47.67	70.52±29.13
People referring to government offices	709 (67.5)	81 (7.7)	220 (21.0)	40 (3.8)	38.07±47.53	61.64±30.57
Physicians and staff members of clinics , hospitals and health centers	741 (70.6)	26 (2.5)	170 (16.2)	113 (10.8)	47.84±47.50	68.37±34.04
People referring clinics , hospitals and health centers	708 (67.4)	54 (5.1)	174 (16.6)	114 (10.9)	43.02±46.85	62.23±33.39
Staff members of department stores	650 (61.9)	81 (7.7)	24 (22.3)	85 (8.1)	34.64±47.08	57.67±33.40
People referring to department stores	648 (61.7)	93 (8.9)	228 (21.7)	80 (7.6)	33.65±46.20	55.75±32.46
Staff members of Small shops	620 (59.0)	98 (9.3)	240 (22.9)	91 (8.7)	31.90±45.99	54.92±32.83
People referring to Small shops	632 (60.2)	108 (10.3)	227 (21.6)	81 (7.7)	33.18±44.85	53.64±32.30
Drivers of public transportation	617 (58.8)	68 (6.5)	214 (20.4)	150 (14.3)	34.78±45.79	51.79±32.32
People using public transportation	599 (57.0)	78 (7.4)	202 (19.2)	156 (14.9)	35.02±45.69	49.84±34.67
People using private car	591 (56.3)	4 (0.4)	324 (30.9)	131 (12.5)	29.12±48.29	48.50±35.02
People in Parks	622 (59.2)	85 (8.1)	187 (17.8)	156 (14.9)	35.32±45.93	53.15±34.32
People in Street	653 (62.2)	105 (10.0)	217 (20.7)	75 (7.1)	33.85±45.13	54.54±32.49

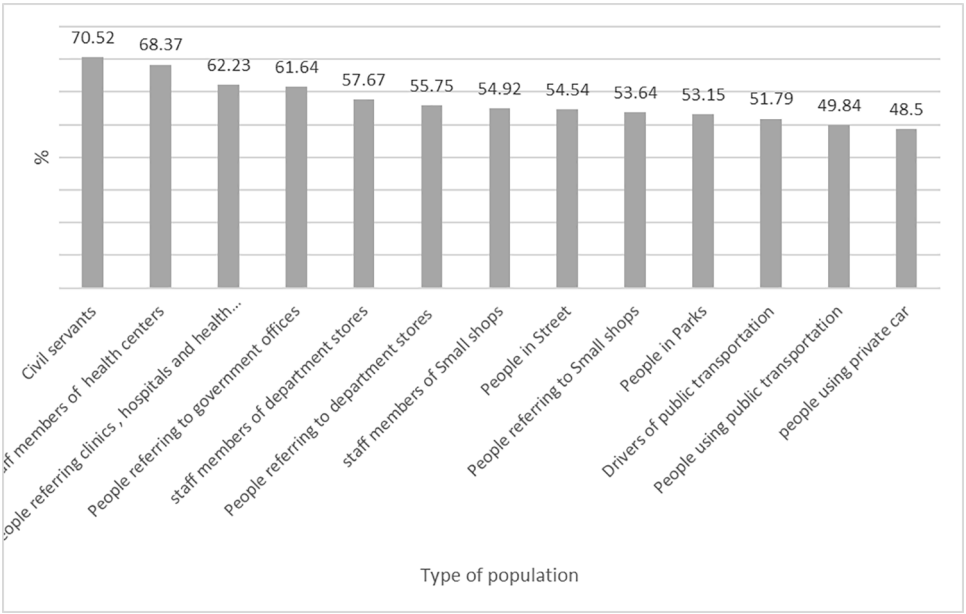

Figure 2: Mean percentage of Currently adherence to physical distance from civil servant's viewpoints in public places in the last two month

and staff members of clinics, hospitals, and health center (16.2%) and among people using private car (30.9%), respectively. The lowest mean percentage of changes in physical distance adherence was related to people using car (29.12±48.29), and the highest mean percentage was related to physicians and staff members of clinics, hospitals, and health centers (47.84±47.50). The lowest percentage of the current adherence to physical distance was 48.50±35.02 among people using private car and the highest percentage was 70.52±29.13 among civil servants (Figure 2). Table 3 presents the correlation between the percentage of changes in mask wearing and adherence to physical distance, and current percentage of changes in mask wearing and adherence to physical distance in each places or people (P<0.001). There was a significant

Table 3: Correlation between changes in percentage and current changes in the percentage of mask wearing and adherence to physical distance

Places ,staff and people	Pearson correlation coefficient for changes percent of mask-wearing and adherence to physical distance	P value	Pearson correlation coefficient for Currently mask-wearing and adherence to physical distance	P value
Civil servants	0.312	<0.001	0.274	<0.001
People referring to government offices	0.393	<0.001	0.318	<0.001
Physicians and staff members of clinics , hospitals and health centers	0.405	<0.001	0.490	<0.001
People referring clinics , hospitals and health centers	0.400	<0.001	0.439	<0.001
Staff members of department stores	0.445	<0.001	0.422	<0.001
People referring to department stores	0.307	<0.001	0.427	<0.001
Staff members of Small shops	0.487	<0.001	0.520	<0.001
People referring to Small shops	0.514	<0.001	0.516	<0.001
Drivers of public transportation	0.492	<0.001	0.523	<0.001
People using public transportation	0.442	<0.001	0.461	<0.001
People using private car	0.431	<0.001	0.493	<0.001
People in Parks	0.540	<0.001	0.634	<0.001
People in Street	0.492	<0.001	0.461	<0.001

positive correlation between the percentage of changes in mask wearing and adherence to physical distance. Also, there is a significant positive correlation between the current percentage of mask wearing and adherence to physical distance in the same place or people (P<0.001).

Discussion

Following the outbreak of COVID-19 virus, it spread rapidly worldwide and shortly afterwards a pandemic was declared by the World Health Organization. In the early stages of development, in the absence of interventions or behavioral changes, the epidemic in the population was quite susceptible and expanding. Wearing a mask, adhering to physical distance, and washing hands were among the recommendations that have been announced. However, the protective properties of the mask and adherence to physical distance have been controversial, so that at the beginning of the pandemic, many people did not adhere to them, but with the severity of the disease in the next peaks, it seemed that people in the community had more commitment to obey.

Therefore, this study was designed to investigate the mask wearing and adhering to physical distance. Most of the participants in this study were more likely to believe in increasing mask wearing in the community, but they had different viewpoints in the type of places. The lowest percentage of increase in mask wearing was among people in the park and the highest percentage was among people referring to government offices. It seems that due to the compulsion of mask wearing in offices and organizations to receive services, wearing mask among people referring to government offices has increased, while in other places this compulsion did not exist. Although there are not many studies in this field due to the onset of the virus, studies suggest that wearing mask can prevent the spread of the virus in the community and it still is seriously recommended (12, 13). Like all other infectious respiratory diseases, in the case of COVID-19, close contacts should also be avoided because transmission through droplets and airways has been reported (14, 15). Physical distance, also called “Social distance” means maintaining the space between one and others outside their homes. It seems that people had less adherence to physical distance, especially when wearing a mask. As to our study, the percentage of incremental changes in adherence to physical distance was less than wearing a mask. The lowest percentage in increasing adherence to physical distance was among users of private cars (56.3%) and the highest among civil servants (74.8%). While the lowest percentage of increase in wearing mask was in the park (67.1%) and the highest among people referring to government offices (86.1%). Many countries, for example Italy and Australia, have implemented restrictions for physical distancing (16, 17). On the other hand, the researchers suggested increasing physical distance to reduce the prevalence of COVID-19 (18, 19). In our study, the lowest mean percentage of changes in adherence to physical distance was related to people using private cars (29.12±48.29) and the highest p to physicians and

staff members of clinics, hospitals, and health centers (47.84±47.50). It seems that in spite of passing from several waves of COVID-19, adherence to physical distance has not increased well yet in our country. Although there is a significant positive correlation between mask wearing and adherence to physical distance, adherence to physical distance is not as good as wearing a mask. Studies, however, emphasize both as well as regular hand washing.

Strength and Limitations

Our study is the first large web-based survey comparing wearing-mask and adhering to physical distance prevalence in the Iranian civil servants in the region. In addition, the findings of the study can be generalized to the population due to the large sample size. The main strength of this study was the data collection format. In the pandemic of COVID-19, other data collection methods were unsafe and challenging for both the participants and the researchers.

Suggestions for Future Studies and Implication

In this study, because of the online nature of the study, we were able to reach staff members who had access to the Internet and excluded those who were not connected to the Internet. Therefore, it is recommended that in future studies, platforms in the context of application packages should be designed in such a way that all employees have access to the questionnaire and answer at any time, even when the Internet is down.

Conclusion

Although mask wearing and adherence to physical distance in community have increased, they have not been developed. On the other hand, community seems to pay less attention to physical distance, perhaps it is believed that only wearing mask is a preventative measure.

Declarations

Ethics approval and consent to participate: The present study conforms with the Helsinki declaration and has been approved by the Research Ethics Committee of Shiraz University of Medical Sciences.

Availability of data and materials: The datasets during and/or analysis during the current study are available from the corresponding author on reasonable request.

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Authors' contributions: ARM contributed substantially to the design of the study. MS, ARM and FR collected the data. SRHM, FA and SA contributed to data collection. MS, FR, ARM had roles in data interpretation. MS wrote the initial draft. FR and RS critically and substantially revised the final article. All the authors reviewed the manuscript critically.

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Conflict of Interest: None declared.

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