

## Research Article

# Perceptions and Practices of Social Distancing in Physicians during Covid-19 Pandemic

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## Abstract

### Background

Perceptions and practices about social distancing are not well reported among physicians. The aim of this study was to assess the practice and perceptions of physicians regarding social distancing and factors associated with it.

### Methods

A cross sectional study among physicians was conducted from October to December 2020. Perception, practices, and possible factors behind low compliance were assessed on a Likert scale. Association between age, gender and physician level and practices, perceptions and factors linked to social distancing was analysed using one-way analysis of variance with significance level at  $p \leq 0.05$ .

### Results

100 doctors responded out of 140 (71.2%), 16 were disregarded. Mean age was  $31.89 \pm 6.33$ . 40 were males (47.6%) with majority being residents (50, 59.5%). Overall, perceptions about social distancing were positive while practices were found lacking. Important factors behind lack of social distancing practice were difficulty in talking with masks ( $1.89 \pm 0.850$ ), difficulty in staying away from friends ( $1.73 \pm 0.855$ ), difficulty in staying away from family ( $1.31 \pm 0.514$ ) and overcrowding of HCWs ( $1.64 \pm 0.739$ ). Attending physicians more strongly agreed with certain perception and had better social distancing practices. Lack of conveyance ( $p=0.001$ ), lack of spaces for eating ( $p=0.003$ ) and resting ( $p=0.001$ ) and difficulty in staying away from friends ( $p=0.002$ ) made practicing social distancing difficult for interns and residents as compared to attending physicians.

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## Conclusion

Physicians normally have a positive perception about social distancing, but due to personal and work-related factors, compliance to social distancing practices is being found lacking.

**Keywords:** Covid-19; Healthcare workers; Social distancing; Perceptions; Practices

## Introduction

Coronavirus disease (Covid-19) caused by a highly infectious organism known as SARS-CoV-2, has affected millions of people worldwide [1]. While some trial drugs have shown promise in improving outcome of Covid-19 and vaccination drive is underway around the world, preventive measures including practicing hand hygiene, wearing mask and social distancing remain the cornerstone strategies in preventing transmission of infection [2,3]. Practicing social distancing has been a challenge not just among the public, but perception about social distancing is also not well reported among physicians [4,5]. Non-compliance to social distancing by healthcare workers (HCWs) has even been reported outside the hospital setting [6].

Social distancing is defined as deliberately increasing the physical space between people to contain the spread of the disease [7]. It is a fundamental aspect of various public health measures being taken to control the spread of Covid-19 pandemic [8]. Even before the advent of this pandemic, importance of social distancing has been reviewed in controlling other viral epidemics [9]. Public health officials have opted certain measures to make sure that social distancing is enforced effectively. These include limiting large gatherings, closing buildings of non-essential work, schools or places of worship and cancelling public events like sports events. It also involves temporary closure of public transport system which may only be used for essential travel [3]. In a rare show of solidarity almost all global leaders agree that currently the best way to control this pandemic is to distance ourselves physically and socially from one another [10]. However, the effectiveness of such measures does not only depend on government officials but also depends on the compliance by the population [11].

SARS-CoV-2 outbreak has put health Care Workers (HCWs) at a higher risk of transmission due to their direct contact with the affected patients. The compliance to social distancing hence becomes even more essential in a healthcare setup [11]. A recent study from United Kingdom shows that HCWs not involved in care of Covid-19 patients are at same risk of developing Covid-19 infection as those who are working in Covid-19 units [12]. This shows that like the general population there is a great role of social distancing in hospital setting as there should be a distance of at least 6-feet between doctors and patients and between doctors themselves [5].

There have been studies about these preventive measures, and the essential role of quarantine measures and social distancing [3,13] but not much stress on studying the people's perception of social distancing and its practice, especially in the developing countries.

Assessment of the practices and perceptions of physicians regarding social distancing becomes much more significant since they are the frontline warriors in this pandemic and are role models for the community. The aim of this study was to assess the practice and perceptions of the physicians regarding social distancing and the factors associated with it.

## Methods

We conducted a cross sectional study among doctors working in a tertiary care hospital in Karachi – Pakistan from October to December 2020. All Physicians (interns, residents and attending physicians) working in internal medicine units were enrolled and consecutive sampling was employed. Interns are those with a bachelor's degree in medicine and in 1<sup>st</sup> year of their training, Residents have completed their internship and are enrolled in the internal medicine residency program, while attending physicians are those who have completed their postgraduate training and have passed their exit exam. Participants were invited to participate through email and WhatsApp. Ethical approval for the study was taken (ERC # 2020-4923-10625). Participation was completely voluntary, and no incentives were given. Social distancing was defined as a physical distance of 6-feet between two persons [4].

## Data collection instrument

A structured questionnaire was designed by the 4 investigators. The questions were first brainstormed and later were compiled together and pretested on 5 participants not part of this study. After minor corrections it was circulated via google forms. The questionnaire was divided into four sections. First section contained questions pertaining to socio-demographic information of the participants along with one general question about the distance required for social distancing. Sections two, three and four were presented as a five-point Likert scale. Section two assessed the perception (strongly agree to strongly disagree), section three evaluated the practices (all the time to never) and section four determined the possible factors behind low compliance (very much to not at all). Overall, mean values of less than 2 in perception and practices were considered as positive behaviour, while mean values of factors less than 2 were regarded as important behind social distancing practice.

## Data analysis

Data was analysed using SPSS version 22, IBM Corp (NY, United States). Mean and SD was used to report continuous variable and frequency and percentage for categorical variable. Responses to the perceptions, practices and factors were on a 5-point Likert scale and were combined to create a continuous variable for analysis. Association between age>30, gender and level of physician and practices, perceptions and factors linked to social distancing was analysed using one-way analysis of variance with significance level at  $p \leq 0.05$ .

## Results

A total of 140 doctors were contacted out of which 100 participated in the online survey giving a response rate of 71.2%. 16 survey responses were disregarded since they were incomplete. Participants included 40 males (47.6%) with a mean age of  $31.89 \pm 6.33$ . Of the 84 participants, there were 22 interns (26.2%), 50 residents (59.5%) and 12 attending physicians (14.3%). All doctors knew about social distancing. However, only 42 doctors (50%) knew that minimum distance for social distancing is 2 metre. Overall, perceptions about

social distancing were positive (mean values less than 2) while practices were found lacking (mean values less than 3) (Table 1). Important personal factors behind lack of social distancing practice were difficulty in talking with masks ( $1.89 \pm 0.850$ ), difficulty in staying away from friends ( $1.73 \pm 0.855$ ) and difficulty in staying away from family ( $1.31 \pm 0.514$ ) (Table 2). Important workplace related factors included overcrowding of HCWs ( $1.64 \pm 0.739$ ) (Table 3).

Analysis of perceptions of doctors showed no differences between gender but showed that people in age group or more than 30 more strongly agree with certain perceptions: application in healthcare setup ( $p=0.013$ ), importance of surgical mask along with social distancing ( $p=0.023$ ), and the need to practice social distancing between HCWs and while interacting with patients ( $p=0.001$ ). Similarly, attending physicians had a better perception than interns and residents: importance of social distancing in Covid-19 pandemic ( $p=0.004$ ), application in healthcare setup ( $p=0.041$ ), importance of surgical mask along with social distancing ( $p=0.031$ ), importance of distancing regardless of age ( $p=0.014$ ), and the need to practice social distancing between HCWs and while interacting with patients ( $p=0.003$ ) (Table 1).

There was a significant difference in social distancing practices between the two age groups: while seeing patients ( $p=0.008$ ), while doing rounds ( $p=0.001$ ), while giving handover ( $p=0.001$ ), while resting ( $p=0.001$ ), while eating ( $p=0.002$ ), while praying ( $p=0.001$ ), during teaching sessions ( $p=0.001$ ), during meetings ( $p=0.003$ ), and on way to hospital ( $p=0.001$ ). Similarly, different job descriptions also had significant differences in practices: while seeing patients ( $p=0.001$ ), while doing rounds ( $p=0.001$ ), while giving handover ( $p=0.001$ ), while resting ( $p=0.001$ ), while eating ( $p=0.001$ ), while praying ( $p=0.001$ ), during teaching sessions ( $p=0.001$ ), during meetings ( $p=0.006$ ), and on way to hospital ( $p=0.001$ ). Females were also less likely to practice social distancing while resting in lounges or call room ( $p=0.021$ ) (Table 1).

Reasons behind low compliance to social distancing were divided into personal and workplace associated factors. Analysis showed that lack of conveyance ( $p=0.001$ ) and difficulty in staying away from friends ( $p=0.002$ ) made practicing social distancing difficult for interns and residents as compared to attending physicians. Similarly, people in age group lesser than 30 had difficulty in practicing social distancing due to lack of conveyance ( $p=0.001$ ). Lack of spaces for eating ( $p=0.003$ ) and resting ( $p=0.001$ ) were two significant factors behind low compliance among interns and residents. Rest of the analysis data is shown in Tables 2 and 3.

## Discussion

Our study shows that the overall perception of doctors on various points relating to social distancing is encouraging and they were agreeable to practice most of the points. Overall, all participants believed that social distancing affects HCWs mentally negatively. However, the overall practice of social distancing was found lacking with both personal and workplace factors behind it, Optimal.

There have been international and local studies to judge the knowledge, attitudes, and practices about Covid-19 on both the general population [14-18] as well as the HCWs [19-22]. However only one study has been done which focuses solely on social distancing and assesses perceptions and practices of the general population [8]. The study reported that males with age>30 and those with higher levels of

	Overall	Age		Gender		Level of physician		
	N=84	Age<30 N=55	Age>30 N=29	Men N=40	Women N=44	Intern N=22	Resident N=59	Attending Physicians N=12
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
<b>Perceptions</b>								
Social distancing is important amid Covid-19 pandemic	1.42 ± 0.680	1.51 ± 0.742	1.24 ± 0.511	1.48 ± 0.716	1.36 ± 0.650	1.82 ± 0.501	1.30 ± 0.735	1.17 ± 0.389
P value		0.086		0.457		0.004		
Social distancing has application in healthcare setup	1.55 ± 0.735	1.69 ± 0.791	1.28 ± 0.528	1.58 ± 0.781	1.52 ± 0.68	1.82 ± 0.588	1.52 ± 0.814	1.17 ± 0.389
P value		0.013		0.105		0.041		
Surgical mask is important along with social distancing	1.74 ± 0.852	1.89 ± 0.896	1.45 ± 0.686	1.75 ± 0.899	1.73 ± 0.817	2.05 ± 0.785	1.72 ± 0.904	1.25 ± 0.452
P value		0.023		0.904		0.031		
Social distancing is important regardless of age	1.89 ± 0.988	2.00 ± 1.04	1.68 ± 0.863	1.87 ± 1.00	1.91 ± 0.984	2.41 ± 1.05	1.71 ± 0.913	1.67 ± 0.888
P value		0.162		0.865		0.014		
Social distancing is practiced between HCWs and patients and between HCWs themselves	1.89 ± 0.944	2.13 ± 0.963	1.45 ± 0.736	1.85 ± 0.975	1.93 ± 0.925	2.41 ± 1.01	1.80 ± 0.881	1.33 ± 0.651
P value		0.001		0.694		0.003		
Social distancing affect HCWs mentally	1.36 ± 0.594	1.36 ± 0.557	1.34 ± 0.670	1.38 ± 0.628	1.34 ± 0.568	1.36 ± 0.581	1.36 ± 0.525	1.33 ± 0.888
P value		0.891		0.795		0.989		
<b>Practices</b>								
While seeing patients	2.40 ± 0.762	2.56 ± 0.688	2.10 ± 0.817	2.40 ± 0.810	2.41 ± 0.726	2.82 ± 0.501	2.38 ± 0.725	1.75 ± 0.866
P value		0.008		0.957		0.001		
While doing round with attending	2.57 ± 0.826	2.78 ± 0.686	2.17 ± 0.928	2.50 ± 0.847	2.64 ± 0.810	3.00 ± 0.535	2.58 ± 0.785	1.75 ± 0.866
P value		0.001		0.453		0.001		
While giving handover to the other physicians	2.64 ± 0.900	2.98 ± 0.561	2.00 ± 1.069	2.53 ± 0.933	2.75 ± 0.866	3.14 ± 0.468	2.82 ± 0.691	1.00 ± 0.001
P value		0.001		0.255		0.001		
While resting in staff lounge or call room	2.71 ± 0.815	2.98 ± 0.593	2.21 ± 0.940	2.50 ± 0.847	2.91 ± 0.741	3.09 ± 0.426	2.78 ± 0.790	1.75 ± 0.754
P value		0.001		0.021		0.001		
While eating	2.75 ± 0.726	2.93 ± 0.634	2.41 ± 0.780	2.78 ± 0.698	2.73 ± 0.758	3.00 ± 0.617	2.80 ± 0.639	2.08 ± 0.900
P value		0.002		0.766		0.001		
While praying	2.44 ± 0.855	2.69 ± 0.717	1.97 ± 0.906	2.35 ± 0.864	2.52 ± 0.849	2.91 ± 0.610	2.46 ± 0.788	1.50 ± 0.798
P value		0.001		0.358		0.001		
During teaching session	2.08 ± 0.839	2.29 ± 0.786	1.69 ± 0.806	2.00 ± 0.847	2.16 ± 0.834	2.14 ± 0.889	2.32 ± 0.713	1.00 ± 0.001
P value		0.001		0.389		0.001		
During meetings	2.25 ± 0.726	2.42 ± 0.658	1.93 ± 0.753	2.25 ± 0.742	2.26 ± 0.719	2.45 ± 0.671	2.30 ± 0.678	1.67 ± 0.778
P value		0.003		1.00		0.006		
While coming and going to hospital	2.48 ± 0.857	2.80 ± 0.590	1.86 ± 0.953	2.40 ± 0.928	2.55 ± 0.791	2.2 ± 0.501	2.62 ± 0.780	1.25 ± 0.622
P value		0.001		0.441		0.001		

**Table 1:** Perceptions and practices on social distancing among physicians overall and by age, gender, and level of physicians.

\*mean values of less than 2 in various perception and practices were considered as positive behaviour.

Factors	Overall	Age		Gender		Level of physician		
	N=84	Age<30 N=55	Age>30 N=29	Men N=40	Women N=44	Intern N=22	Resident N=59	Attending Physicians N=12
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Lack of awareness	4.61 ± 0.695	4.58 ± 0.658	4.66 ± 0.658	4.45 ± 0.846	4.75 ± 0.488	4.41 ± 0.734	4.64 ± 0.722	4.83 ± 0.389
P value		0.648		0.047		0.206		
Feeling that social distancing is not important	4.38 ± 0.981	4.27 ± 1.008	4.59 ± 0.907	4.33 ± 1.047	4.43 ± 0.925	4.05 ± 0.899	4.42 ± 1.071	4.83 ± 0.389
P value		0.165		0.621		0.072		
Lack of conveyance due to lockdown	2.44 ± 1.255	2.04 ± 0.881	3.21 ± 1.497	2.63 ± 1.275	2.27 ± 1.227	1.86 ± 0.941	2.18 ± 0.919	4.58 ± 0.669
P value		0.001		0.201		0.001		
Difficulty in talking with masks	1.89 ± 0.850	1.84 ± 0.739	2.00 ± 1.035	2.03 ± 0.947	1.77 ± 0.743	1.82 ± 0.733	1.88 ± 0.872	2.08 ± 0.996
P value		0.405		0.176		0.681		
Difficulty in staying away from friends	1.73 ± 0.855	1.62 ± 0.623	1.93 ± 1.163	1.75 ± 0.954	1.70 ± 0.765	1.64 ± 0.581	1.58 ± 0.785	2.50 ± 1.168
P value		0.111		0.809		0.002		
Difficulty in staying away from family	1.31 ± 0.514	1.35 ± 0.522	1.24 ± 0.435	1.25 ± 0.439	1.36 ± 0.574	1.32 ± 0.568	1.32 ± 0.513	1.25 ± 0.452
P value		0.381		0.315		0.912		

**Table 2:** Personal factors associated with social distancing among physicians overall and by age, gender, and level of physicians.

\*mean values of factors less than 2 were regarded as important behind social distancing practice.

Factors	Overall	Age		Gender		Level of physician		
	N=84	Age< 30 N=55	Age > 30 N=29	Men N=40	N=84	Intern N=22	Resident N=59	Attending Physicians N=12
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Lack of eating spaces	2.54 ± 1.058	2.31 ± 1.016	2.697 ± 1.017	2.63 ± 1.030	2.45 ± 1.088	2.00 ± 0.926	2.60 ± 1.030	3.25 ± 0.965
P value		0.006		0.464		0.003		
Lack of resting areas for physicians	2.30 ± 1.333	1.73 ± 0.757	3.38 ± 2.30	2.53 ± 1.450	2.09 ± 1.197	1.55 ± 0.739	2.00 ± 0.857	4.92 ± 0.289
P value		0.001		0.137		0.001		
Presence of sick patients	2.96 ± 0.963	3.02 ± 1.080	2.86 ± 0.693	2.88 ± 0.966	3.05 ± 0.963	2.82 ± 1.22	3.06 ± 0.890	2.83 ± 0.718
P value		0.483		0.421		0.548		
Presence of overbearing attendants	2.98 ± 0.905	3.00 ± 0.839	2.93 ± 1.033	2.80 ± 0.966	3.14 ± 0.824	3.05 ± 0.844	3.08 ± 0.853	2.42 ± 1.084
P value		0.742		0.089		0.066		
Overcrowding of HCWs	1.64 ± 0.739	1.56 ± 0.688	1.79 ± 0.819	1.55 ± 0.714	1.73 ± 0.758	1.64 ± 0.790	1.56 ± 0.705	2.00 ± 0.739
P value		0.177		0.275		0.180		

**Table 3:** Workplace related factors associated with social distancing among physicians overall and by age, gender, and level of physicians.

\*mean values of factors less than 2 were regarded as important behind social distancing practice.

education tend to have significantly better social distancing practices. Our study though only on physicians, also showed that people in age>30 group and attending physicians who obviously had a better risk perception about Covid-19 had better social distancing practices and attitudes. However, gender had no significant impact on practices or perceptions. Overall compliance to social distancing practices even varies in general population with one study reporting 48% [23] while another showing 89% compliance [24].

Review of the practices of doctors in our study showed that overall, there was lack of compliance regarding social distancing in all aspects (mean of all points greater than 2.0), with eating and resting being two of the main times when social distancing was least practiced. Findings showed that in comparison to interns and residents, the practices of attending physicians were better most of the time. This can be attributed to greater sense of responsibility, better risk

perception of Covid-19, and better availability of facilities while eating, resting or praying. Female doctors were found to have less likely observed social distancing while resting in staff lounges. This may be due to rather large numbers of female doctors and limited resting spaces.

Studies done assessing the perception and practices of physicians with respect to various preventive measures have shown similar findings as to the ones observed in our study with regards to social distancing. All studies have shown that there is no association between perception or attitude with age and gender [19-22]. No study has compared the social distancing perceptions and practices amongst different levels of physicians. However, our study showed that the attending physicians strongly agreed with the importance of social distancing in general as well as in healthcare setup, application of social distancing in all aspects of patient management including interactions within hospital and on the use of surgical face mask along with social distancing. Since they made bulk of the population in age group greater than 30, there was again a significant difference in perception about the application of social distancing in healthcare setup and about the use of surgical face mask in addition to social distancing.

Two studies from Pakistan and Taiwan found association between profession and perceptions on Covid-19 [20,22]. Since our study focused only on doctors, we were unable to comment on this association. Although our study only assessed the perception about face mask along with social distancing, the results do match with those seen in another study from Pakistan which showed that only 45% of healthcare professionals used face mask within the hospital as well as outside [19].

Our study also highlighted barriers behind practicing social distancing and divided them into personal and workplace associated factors. Difficulty in staying away from family and friends, lack of conveyance and difficulty in talking with masks were the major personal barriers behind low compliance. However, lack of conveyance and difficulty in staying away from friends was more significantly observed in interns and residents rather than in attending physicians. The study from general population of Egypt also observed that staying away from friends and family was the most important barrier to efficiently practicing social distancing [8].

The major workplace related barrier to social distancing had been overcrowding of HCWs in our study. Other studies have also highlighted this issue which needs to be overcome by rescheduling staff roster and making split team arrangements [25]. Saqlain et al. also noted that overcrowding in emergency room areas is one of the major reasons behind poor infection control practices [20]. The overcrowding problem is also seconded in another study which found that secondary care hospitals had better Covid-19 practices than the tertiary care centres presumably due to less flow of patients and healthcare professionals [19]. Although lack of eating and resting areas cannot be considered as major reasons for low compliance among the overall population in our study, among interns and residents it was more significantly observed as a major barrier for low compliance. The workplace reasons behind low compliance correlate with the practices of healthcare physicians shown in our study.

This study has some implicit limitations. Firstly, it is a cross sectional study with an online survey which make responses dependant on honesty and affected by recall bias. As the study was done in a private sector hospital with more facilities and since convenience

sampling was employed, results cannot be generalized to overall healthcare sector. Lastly the study was conducted in an institution where there were rigorous checks on following proper infection control policies and social distancing. This may have resulted in response and sampling bias. Nonetheless, to the best of our knowledge this study is the first of its kind to assess the current perceptions and practices of physicians regarding social distancing and to determine the barriers behind low compliance.

## Conclusion

Physicians normally have a positive perception about social distancing, but due to personal and work-related factors, compliance to social distancing practices is being found lacking. The authorities should make necessary interventions to remove these barriers since these are the frontline warriors against the pandemic and an already ailing health system cannot afford further problems.

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