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Research Article

Lifestyle and Dietary Habits of Covid-19 Positive Patients

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Abstract

Background: Covid-19 is a serious pandemic disease that spread throughout the World. It reported that people having high immunity defend this disease while low immunity die. This study reported the lifestyle and dietary habits of people who become victim of covid-19 to know people of which habits are more prone to the disease.

Methodology: Questionnaire having questions related to lifestyle and dietary was directly filled during March to June 2020 under SOPs, 200 the covid-19 positive patients of each three main hospital of Province Punjab Pakistan, Mayo Hospital Lahore, Nishtar Hospital Multan, and Tayyab Urdagan Hospital Muzaffar Garh.

Results: It reported that Covid-19 is more in the age 21-40 years (83.3%)people, more in men, more in people of having comorbidities and medical problems and patients having positive family history of COVID-19. 79.7% were fast food consumers. 18% patients consumed yogurt in daily food and 59.5% were smokers. Most of the patients were physically inactive (94%).

Conclusion: Purpose of this study is to aware the people to change their life style and dietary habits so prepare their body to fight against Covid-19. This is the first report for the awareness of people in Pakistan.

Keywords: *COVID-19; Life Style; Dietary Habits*

Introduction

Viral outbreaks have been emerging at very high rate per direction of World Health Organization (WHO) due to these pandemics serious consequences observed worldwide. In last two decades a lots of outbreaks such as Severe Acute Respiratory Syndrome Coronavirus (SARS- CoV) in 2003 and Influenza in 2009 have been reported [1].

Progressing on this timeline it was found in Wuhan, Hubei, a province in People's Republic of China at the end of 2019 that some Chinese peasants are showing clinical symptoms of unidentified pneumonia. These clinical signs were like viral pneumonia. After lab test confirmation the experts of CDC China declare the etiology of this pneumonia that was novel coronavirus [2]. The cases of novel coronavi-

rus (COVID-19) spread all over the world thus declared as pandemic. The infected person shows pneumonia and other associated respiratory symptoms [3]. It believed that this pandemic is a zoonotic in its origin as the earlier victims were those people who visited seafood and local markets of animals [4,5]. The pandemic not only increased the death tolls, but also put psychological pressure on not only China but the entire international community [6,7].

On the one hand, in spite of that an era of quarantine is the best choice and recommendation to stop the rapid spread infections, this may have collateral effects on further scopes of the quarantined patients´ health, and particularly in those mentioned as being at higher risk. Initiating a sudden quarantine state implies a radical change in the lifestyle of the population [8] These régimes and behaviors in several cases comprise a definite level of physical activity (PA) and exercise to keep up an adequate health status, to counteract the negative consequences of particular maladies, for example diabetes, hypertension, CVD, respiratory diseases, or even simply to guarantee an active aging by reducing the risk of frailty, sarcopenia and dementia, as associated diseases in older people [9].

Transmission of this infection is very rapid from man to man but it observed that a lots of disparities of case fatality between sex and gender, [10] as high death rate in men as compared to women [11]. It observed that there exist an age difference among the susceptible patients as those patients having chronic disease are more prone to COVID-19 infection than younger and middle-aged victims [12] besides this among the children this infection reported less common as predictions say that children restricted and less outdoor activities but pad but pediatric cases may toll if these restriction is uplifted [13-15]. Molecular studies have revealed that there are some other reasons that children are less susceptible to infection than the elders they have described a correlation between maturation factor and virus receptors [16]. Special attention is deserved for the elderly population group, because in older people Physical activities and exercise impact the mentioned benefits on many diseases but also has added effects on hallmarks of aging and associated diseases [17]. According to certain observations it has been found that during quarantine and isolation period physical exercise has proved a good remedy against the infection, but modality, frequency, volume, and intensity of physical exercise also considered. This therapy is more effective and important for cardiovascular patients [18].

Obesity has devastating role in COVID-19 patients with respect to age, this infection is more threatening to that older patient with higher body mass index than the patient with low BMI [19]. Severity of diseases, immunosuppression, and diabetes and organ failure are dreadful risk factors for infected persons [20].

All these limits are not enough discussed about this pandemic. There is a dire need to educate the people especially in Pakistan. The pandemics and epidemics crisis are natural occurings which occur periodically. People may face intense disaster if proper awareness is not given. Due to lack of awareness the bulging losses may disturb mental and psychological abilities. Behavior, life style, attitude towards this pandemic adoptive. In developing countries like Pakistan health facilities are not of that standard as in developed countries. Massive activities of people who are unaware and non-serious may prove horrified. The purpose of this study is to conduct awareness to people who how they can protect them in such circumstances by adopting or changing their lifestyle. The changed lifestyle may prove a good remedies for infectious and non-infectious as well. In this quarantine and isolation period may result in fruitful consequences.

Methodology

Study design

Hospital based, descriptive, cross-sectional study.

Study setting

Questionnaire having questions related to life style and dietary was indirectly filled during March to June 2020 under SOPs from covid-19 positive and negative patients of each three main hospital of Province Punjab Pakistan, Mayo Hospital Lahore, Nishtar Hospital

Multan, and Tayyab Urdagan Hospital Muzaffar Garh (Figure 1). It was noted there were 305 Covid Positive and 295 patients were Covid negative.

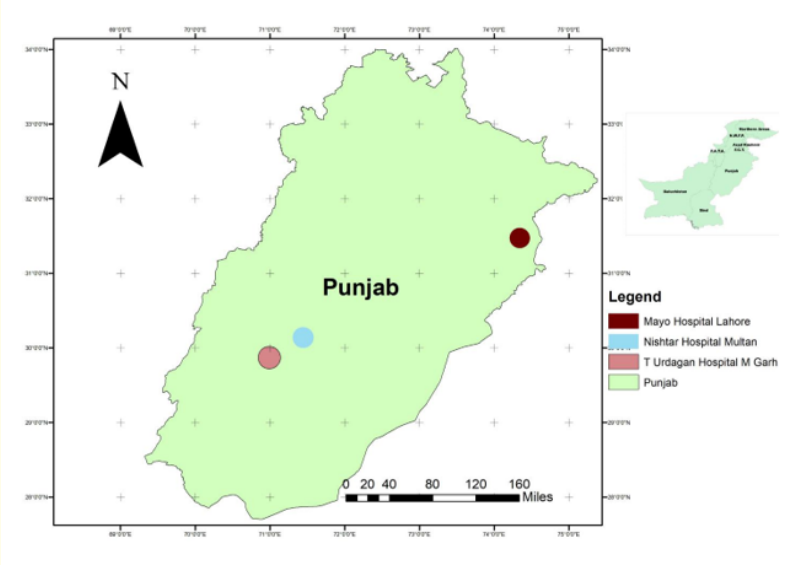

Figure 1: *Study area, color hotspot show the location of hospitals.*

Statistical Analysis

Statistics analysis has been performed on IBM® SPSS Statistics Version 22. The calculations reported for categorical variables and chi-square test applied to discover association of these categorical variables with COVID-19 positive and negative cases. A p-value of < 0.05 considered statistically significant.

Results

In the study, among the 600 participants 305 (50.8%) were corona positive cases. Most of the participants were men 478 (79.7%), aged 21to 60 years 541 (90.2%) had an educational level of graduate or primary 571 (95.2%), had a smoking habit 305 (50.8%), and did exercise 474 (79.0%). Of the participants, 582 (97.0%) lived in city and village. The eating habits of participants consuming different foods i.e. fast food, mixed food, vegetables and yogurt were 252 (42.0%), 539 (89.8%) 474 (79.0%) and 474 (79.0%). A considerable proportion of participants had one disease 474 (79.0%), two diseases 458 (76.3%) and three diseases 476 (79.3%) irrespective of corona virus disease.

Gender had a significant relationship with COVID positive cases having more men 205(67.2%) than women 100 (32.8%) with ($p < 0.001$). However age-groups did not show a significant association but most of the COVID positive cases were between 21 - 60 years of age 278 (91.1%). None of the patients having no smoking habit had COVID while 305 (100%) did smoking were COVID positive patients and found statistically significant ($p < 0.001$). Most of the COVID positive patients lived in city and village 292 (95.7%) while only 13 (4.3%) in town and is significant ($p = 0.006$). Compared with those having COVID disease, and had cases present in family were more likely to report disease ($p < 0.001$). Exercise did not show significant association with the patients.

The eating habits of patients showed that patient having fast food are more likely to have the disease and significant association was found ($p < 0.001$). However mixed food, vegetables and yogurt did not have significant association with the disease (all $p > 0.05$).

The patient who had already has disability different diseases are more likely exposed to COVID disease i.e. patients who had already has disability one disease did not show significant association (p = 0.554) while patients who were suffering from two and three diseases showed significant association with patients having COVID (both p-values < 0.001) (Table 1).

Variables	Patients			p-values
	Negative n (%)	Positive n (%)	Total n (%)	
Gender				
Male	273 (92.5)	205 (67.2)	478 (79.7)	<0.001
Female	22 (7.5)	100 (32.8)	122 (20.3)	
Age-groups				
1-20 (yrs)	24 (8.1)	13 (4.3)	37 (6.2)	0.109
21-40 (yrs)	246 (83.4)	254 (83.3)	500 (83.3)	
41-60 (yrs)	17 (5.8)	24 (7.9)	41 (6.8)	
>60 (yrs)	8 (2.7)	14 (4.6)	22 (3.7)	
Education				
Primary	285 (96.6)	246 (80.7)	531 (88.5)	<0.001
Graduation	5 (1.7)	35 (11.5)	40 (6.7)	
Post Graduation	5 (1.7)	24 (7.9)	29 (4.8)	
Smoking				
No	295 (100.0)	0 (0.0)	295 (49.2)	<0.001
Yes	0 (0.0)	305 (100.0)	305 (50.8)	
Exercise				
No	59 (20.0)	67 (22.0)	126 (21.0)	0.554
Yes	236 (80.0)	238 (78.0)	474 (79.0)	
Place				
City	276 (93.6)	261 (85.6)	537 (89.5)	0.006
Village	14 (4.7)	31 (10.2)	45 (7.5)	
Town	5 (1.7)	13 (4.3)	18 (3.0)	
Family cases				
Absent	255 (86.4)	93 (30.5)	348 (58.0)	<0.001
Present	40 (13.6)	212 (69.5)	252 (42.0)	

Fast food				
No	255 (86.4)	93 (13.5)	348 (58.0)	<0.001
Yes	40 (13.6)	212 (69.5)	252 (42.0)	
Mix food				
No	37 (12.5)	24 (7.9)	61 (10.2)	0.058
Yes	258 (87.5)	281 (92.1)	539 (89.8)	
Vegetables				
No	59 (20.0)	67 (22.0)	126 (21.0)	0.554
Yes	236 (80.0)	238 (78.0)	474 (79.0)	
Yogurt				
No	59 (20.0)	67 (22.0)	126 (21.0)	0.554
Yes	236 (80.0)	238 (78.0)	474 (79.0)	
Disease-1				
No	59 (20.0)	67 (22.0)	126 (21.0)	0.554
Yes	236 (80.0)	238 (78.0)	474 (79.0)	
Disease-2				
No	142 (48.1)	0 (0.0)	142 (23.7)	<0.001
Yes	153 (51.9)	305 (100.0)	458 (76.3)	
Disease-3				
No	37 (12.5)	87 (28.5)	124 (20.7)	<0.001
Yes	258 (87.5)	218 (71.5)	476 (79.3)	

Table 1: *Relation of variable with Positive and Negative cases of Covid-19.*

Total 600 patients of COVID-19 (i.e. 200 patients from MAYO hospital, 200 from NMC hospital and 200 from TUM hospital) included in the study. Out of 600 patients, most of them were of age 21 - 40 years (83.3%). About 79.7% were men and 20.3% were women. Out of 600, 537 patients belonged from village and 531patients had education till primary. Almost 71.3% of the patients presented with more than two comorbidities and medical problems and 539 patients had positive family history of COVID-19.

Out of 600 patients, 79.7% were fast food consumers, 12.5% were mix food consumers, 7.8% were vegetables consumer, 18% patients consumed yogurt in daily food and 59.5% were smokers. Most of the patients were physically inactive (94%).

Almost all the COVID-19 patients of age > 60 years were physically inactive (100%), because in patients of age 41 - 60 years were physically inactive (95.1%). The relationship between age and physical activity was statistically insignificant ($p > 0.05$). About 95.4% of the male patients were physically inactive and 89.3% of the women were physically inactive. Statistically significant difference was observed between physically active and gender ($p < 0.05$). Approximately 97% of the COVID-19 patients living in village were physically inactive because 77.8% and 61.1% of the patients living in town and city were physically inactive. Relationship between place and physically active was statistically significant ($p < 0.05$). Majority of the COVID-19 patients were smokers and physically inactive (92.2%) and statistically significant association was found between physical inactivity and smoking status ($p < 0.05$). About 95.8% of the physically inactive COVID-19 patients were fast food consumers, 93.3% were mix food consumers, 78.8% were vegetable consumers and 89.8% of the physically inactive patients were consuming yogurt in daily food items. Statistically significant association was found between dietary habits and physical activity ($p < 0.05$).

Discussion

This is a survey study to use the effects of COVID-19 on life style. This study involves various socio-demographic parameters along with dietary habitat and life style. A total of data of 600 patients form three different hospitals of Province Punjab, Pakistan collected. It observed that lifestyle evident impact on COVID-19 patients.

In the light of this data it seen that from age 1 - 20 years 91.9% were not physically active while 8.1% were active. Above this age from 21 - 40 years people 94% were active while only 6% were physically active. It observed that a person is physical active at a certain age as age progresses, physical activeness is not found. Prevalence of COVID-19 infection is more common in older individuals as compared to younger one [21]. WHO recommends 60 min/day of moderate-to-vigorous physical activity for 6 - 17-yr-olds, and 75 min/wk of vigorous or 150 min/wk of moderate physical activity for adults and elderly, including 3 and 2 days/wk, respectively, with muscle and bone strengthening.

Gender disparities have been observed about this infection [22]. It has been seen the women are less prone to infection as compared to man. Compared to women, men are more likely to die from COVID-19 and tend to have worse clinical results Among the social factors that contribute to this gender gap are gender differences in the likelihood of being engaged in workplace interactions that are critical for the spread of infectious diseases transmitted by the respiratory or close-contact route, such as COVID-19 as the life style is also observed 95.4% male patients were not physical active while women 89.3% were not active. In the ongoing pandemic it seen that sex and gender related factors exert a significant impact [23].

In the light of given data locality has revealed the lifestyle of people. It observed that rural and urban peasant have a diverse lifestyle. Villagers are more physically active as compared to those people inhabiting towns or cities 18% villagers were physically active while 10% and 7% people of town and city. Molecular study has shown that smoking life style and physical activeness put a significant role about COVID-19 infection [24]. The smokers are less active physically than non-smoker. In the light of given data 28% non-smoker were active while 7% smokers were physically active. It shown that majority of these people were not physically active as more than 90% are not physically active regardless of smokers and non-smokers. If we further smoking disposition about gender study, it observed that rate of smoking is more common in men than women [25]. Expansion of public health and food security is a primary need of nation, with emergence of epidemics provision of food and health is a dire need of people as accessed from previous outbreaks [26]. Amidst the current threats of COVID-19 people are driven to change the diet pattern due to fear and anxiety [27]. In the scenario of given data, it shown that dietary life style was also evident in these people, use of fast food and mix food affected negatively as above 93% were not active. Those individual consuming vegetables showed a good response. Several studies reported that fruits and vegetables supplying micronutrients can boost immune function. This happens because some of these micronutrients such as vitamin E, vitamin C, and beta-carotene are antioxidants [28]. Similar effect is also related to use of yogurt. Milk products such as yogurt could also augmented natural killer cell

activity and reduce the risk of respiratory infections [29-31]. In above discussion it has been observed that impacts of lifestyle are significant in the emerging pandemic of COVID-19. The probability among the people of different age is 0.704. Keeping in view other parameters like gender, locality and dietary health etc., this is about 0.011.

Conclusion

In this study it investigated that lifestyle has greater impact on COVID-19 patients. The prevalence of infection is variable about different parameters like gender, age, dietary habit, place etc. In this study it observed that people with age 21 - 40years are more active than younger and elder than this age. The p-value for gender and smoking parameters are same as 0.011. Besides this the given study also show that lifestyle dietary habit and living place also play a significant role. In general, we find that gender is a more important factor in workers' levels of exposure to contagion than their education or age. While no foods or dietary supplements can prevent or cure COVID-19 infection, healthy diets are important for supporting immune systems. Good nutrition can also cut the likelihood of developing other health problems, including obesity, heart disease, diabetes and some types of cancer. The goal of this study is to give awareness to the people who how mode of lifestyle has influence on COVID-19 infection. If people become familiar about this strategic lifestyle habits the upcoming pandemic results beneficial instead of lethal. By adopting the daily routine of doing exercise or physical activities with healthy food habit to improve immune system.

To sum up, we find that although there are several variables including, gender, age, education, country place, smoking habits, physical aliveness, and dietary routine of an each characteristics that influence the prevalence to contagious diseases such as COVID-19, gender appears to be the one with the greatest impact.

Several studies recommended with large sample size and participants from different ethnic groups.

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