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PROFILE OF COVID-19 POSITIVES IN A METROPOLITAN CITY

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ABSTRACT

This cross-sectional, observational study was conducted in a metropolitan city on 207 COVID-19 positive individuals (98 females: 47.34% and 109 males: 52.66%) by using a pre-tested and pre-validated online questionnaire to determine their socio-demographic and symptom profile. The gender difference in age distribution of participants was not significant. There were no significant gender differences in age distribution of participants, marital status, education and possession of medical insurance. There were highly significant gender differences in occupation (Z=3.342; p=0.0008) and size of household (Z=3.804; p=0.0001). Television was identified as the main source of information on COVID-19 by 44.89% females, with significant gender difference (Z=2.750; p=0.005). A significantly higher proportion of females (Z=2.230; p=0.020) revealed having had indirect contact with COVID-19 positive person. A significantly high (Z=2.848; p=0.004) proportion of males (21.10%) had tremors, as compared to females (7.14%). A significantly (Z=2.386; p=0.016) higher proportion of females reported mental stress. But, the gender differences were not significant in those reporting negative feelings, over-reaction to situations, feeling of worthlessness and lack of initiative. The participants had an adequate level of knowledge on COVID-19.

KEYWORDS: COVID-19 Positive, Socio-demographic profile, Symptom profile.

INTRODUCTION

Corona viruses are enveloped non-segmented RNA viruses. Under the electron microscope, the virus has a crown-like appearance (Latin: "corona"=crown) due to the presence of envelope spike glycoproteins.[1] Corona viruses are widely distributed among birds, livestock, and mammals, such as, camels, bats, masked palm civets, mice, dogs, and cats.[2,3] The novel coronavirus, COVID-19, which started in mainland China,[4] has spread globally, with no proven remedy or vaccination against COVID-19 infection till date.

The main transmission routes for COVID-19 include droplets transmission, contact transmission and aerosol transmission. Droplets transmission may occur when respiratory droplets (released by an infected person by coughing or sneezing) are ingested or inhaled by individuals nearby in close proximity; contact transmission may occur when a subject touches a surface or object contaminated with the virus and then touch their mouth, nose, or eyes; and aerosol transmission may occur when respiratory droplets form aerosols and are inhaled into the lungs in a relatively closed environment.[5] Strong infection control measures[6] including social distancing[7] are the primary intervention to minimize the spread of the virus in both health care settings and the community.

Based on the severity of clinical manifestations, COVID-19 infection may be classified into – [i] mild, [ii] moderate, [iii] severe, and [iv] critical.[4]

[i] Mild cases: The majority (81%) of COVID-19 cases are mild in severity,[1] without radiographic features.[4] The symptoms are similar to that of an upper respiratory tract viral infection, which include dry cough, mild fever, nasal congestion, sore throat, headache, muscle pain, malaise and absence of dyspnoea.[1]

[ii] Moderate cases: These patients present with cough, dyspnoea and tachypnoea (respiratory rate>30/minute),[1] without manifestations of severe disease.

[iii] Severe cases: These patients present with severe pneumonia, acute respiratory distress syndrome (ARDS), sepsis, or septic shock.[1] Clinical presentations include the presence of severe dyspnoea, tachypnoea (respiratory rate>30/minute), respiratory distress, and/or more than

50% lung infiltrates within 24 to 48 hours, but with no or moderate fever.[1]

[iv] Critical cases: About 5% of patients can develop features of respiratory failure, cardiac injury, septic shock, or multiple organ dysfunction.[1,4] The case fatality rate for critical patients is high for patients with pre-existing comorbidities, such as, diabetes, respiratory disease, cardiovascular disease, hypertension and cancer, while those without comorbidites have a lower case fatality rate.[4] The development of ARDS indicates recent or worsening respiratory failure. COVID-19 patients with sepsis are the most critical because sepsis is accompanied by multi-organ dysfunction due to dysregulated host response to infection. Signs of organ dysfunction include severe dyspnoea, low oxygen saturation, reduced urine output, tachycardia, hypotension, cold extremities, skin mottling, and altered mental status.[1]

This study was conducted to determine the socio-demographic and symptom profile of COVID-19 positive individuals.

MATERIALS AND METHODS

This cross-sectional, observational study was conducted in a metropolitan city using the snow ball sampling technique. A pre-tested and pre-validated questionnaire was administered via Google forms to COVID-positive individuals, of either gender, in a metropolitan city. Informed consent was taken on the Google forms. The questionnaire was designed to elicit information on socio-demographics and a variety of symptoms experienced by the participants. The data were adapted to Microsoft Excel spreadsheet (Microsoft Corporation, Redmond, WA, USA) and analyzed using SPSS statistical software Windows Version 25.0 (IBM Corporation, Armonk, NY, USA). Categorical data were presented as percentages. The standard error of difference between two sample proportions was computed. Statistical significance was determined at $p<0.05$.

RESULTS AND DISCUSSION

There were 207 participants (98 females: 47.34% and 109 males: 52.66%).

Socio-demographic profile: The gender difference in age distribution of participants was not significant (Table 1). There were no significant gender differences in marital status (Z=0.524; p=0.603), education (Z=0.401; p=0.689) and possession of medical insurance (Z=0.248; p=0.802). However, there were highly significant gender differences in occupation (Z=3.342; p=0.0008) and size of household (Z=3.804; p=0.0001).

Table 1: Age distribution.

Age group (years)	Females (n=98)	Males (n=109)	Z value	'p' value
Less than 20	16 (16.33%)	14 (12.84%)	0.710	0.477
21-30	28 (28.57%)	31 (28.44%)	0.020	0.984
31-40	25 (25.51%)	25 (22.94%)	0.432	0.667
41-50	22 (22.45%)	30 (27.52%)	0.840	0.400
51+	07 (07.14%)	09 (08.26%)	0.299	0.764

Z= Standard error of difference between two proportions.

Awareness of COVID-19: 86.73% females and 84.40% males knew the route of transmission, without significant gender difference (Z=0.475; p=0.631). Though a higher proportion of males identified the Internet as their main source of information, the gender difference was not significant (Z=1.639; p=0.101). Television was identified as the main sources of information on COVID-19 by 44.89% females, with significant gender difference (Z=2.750; p=0.005). An Egyptian study found that the primary sources of information on COVID-19 were social media (66.9%), and the internet (58.3%).[8] Acquisition of awareness through mobile phone ring tones, print, electronic and social media has its own merits and demerits.[9] Management of the COVID-19 outbreak depends largely on people's observance of infection control measures, which, in turn, is primarily determined by knowledge, attitudes, and practices (KAP) of the public.[10,11] Stigmatization, panic reactions and non-scientific "interventions" to prevent infection have an undesirable impact on outbreak control.[10] Studies conducted in India[12,13] and China[10,14] have reported that the practices in relation to prevention of COVID-19 infection are affected by gender and that awareness was significantly less among the elderly, those with less education, rural inhabitants and those with lower income levels.[8,10] Studies on health care related persons have reported high levels of knowledge and awareness regarding COVID-19.[9]

COVID-19 profile: The gender differences in close contact with COVID-19 positive person, infective material, traveller to "hot spots" and recent quarantine were not significant (Table 2). But a significantly higher proportion of females (Z=2.230; p=0.020) revealed having had indirect contact with COVID-19 positive person.

Table 2: Gender differences in COVID-19 profile.

Parameter	Females (n=98)	Males (n=109)	Z value	'p' value
Close contact with COVID-19 positive person	02 (02.04%)	01 (00.92%)	0.675	0.496
Contact with infective material	04 (04.08%)	03 (02.75%)	0.528	0.596
Indirect contact with COVID-19 positive person	07 (07.14%)	01 (00.92%)	2.230	0.020 *
Close contact with traveller to "hot spots"	08 (08.16%)	07 (06.42%)	0.482	0.631
History of recent quarantine	20 (20.41%)	22 (20.18%)	0.040	0.968

Z= Standard error of difference between two proportions.

Symptom profile: The gender differences were not significant for symptoms, such as dryness of mouth (Z=0.218; p=0.825), non-exertional dyspnoea (Z=1.038; p=0.298) and non-exertional palpitations (Z=0.771; p=0.441). However, a significantly high (Z=2.848; p=0.004) proportion of males (21.10%) had tremors, as compared to females (7.14%). COVID-19 manifests with varying clinical manifestations ranging from asymptomatic patients to septic shock and multi-organ dysfunction.[1] The most common symptoms of patients include fever, fatigue,[8] dry cough, malaise, dyspnoea,[8] abdominal discomfort and diarrhoea.[4,15] The virus can also cause diseases of the respiratory, hepatic, nervous system, and gastrointestinal systems.[16] The aged population and persons with co-morbidities are more likely to get infected and are more vulnerable to serious complications, which may be associated with acute respiratory distress syndrome (ARDS), septic shock, severe metabolic acidosis, bleeding and coagulation dysfunction,[16] and cytokine storm.[17]

Psychological profile: Higher proportion of females (55.10%) reported mental stress, as compared to males (38.53%), exhibiting significant gender difference (Z=2.386; p=0.016). But the gender differences were not significant in those reporting negative feelings (Z=0.692; p=0.490), over-reaction to situations (Z=0.940; p=0.347), feeling of worthlessness (Z=0.750; p=0.453) and lack of initiative (Z=0.975; p=0.327). Though this pandemic has disrupted the life, economy and health of people, few researchers[18,19] have studied the psychological impact of this pandemic. Though lockdowns help in extending the doubling time of cases[20] and in slowing the transmission of infections,[21] lockdowns also cause reduced access to family, friends, and other social support systems resulting in loneliness, anxiety and depression,[22] because many tend to link compulsory hospitalization with imprisonment.[23] The risk factors for high levels of stress and anxiety were female gender, student status, symptoms and poor self-rated health status.[4] In an online Italian survey, respondents of either gender, aged 18-35 years, reported increased the usage of digital media near bedtime, going to bed early and waking up late, spending more time in bed but with reduced quality of sleep.[24] Young adults are likely to be heavy digital users and are at high risk for sleep disturbance.[25] The negative psychological impact of stress can be buffered by involving oneself in multiple types of leisure activities or hobbies.[26] Female respondents who had indoor hobbies used these hobbies as coping mechanism during the lockdown and felt that the lockdown had significantly improved emotional bonding with friends and family,[27] while frustration and yearning for active life of the pre-lockdown period was more frequent among male respondents who had few or no hobbies.[28] A significant gender difference in concentrating on work or studies, worrying about the future and experiencing monotony and restlessness has also been reported.[28]

CONCLUSION

The study revealed that the participants had an adequate level of knowledge on COVID-19. A significantly higher proportion of female participants identified television as the main source of information on COVID-19, had indirect contact with COVID-19 positive individual and reported mental stress.

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