A Quantitative Study on the Behaviours of Public Toward Covid-19 in East London district of South Africa

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ABSTRACT

Background: COVID-19 is a highly dangerous Coronavirus disease which originated in China. The wide spread of this disease to other countries at a high pace led the World Health Organization to announce COVID-19 as a global health crisis. As the fatality rate rapidly increased globally, it affected people's behaviours to a large extent in the form of fear, panic emotion and unwanted anxiety. The aim of this research was to evaluate public behaviours toward COVID-19 in South Africa.

Methods: The research employed a quantitative methodology, and descriptive design was used to collect the data. Using virtual snowball sampling technique, a total of 160 individuals who were above 17 years of age and literate in English were selected from East London district in the Eastern Cape State of South Africa. A two point Likert-scale questionnaire was developed in Google Form, and the responses collected from the online survey were entered in the Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics and Analysis of Variance were used to analyse the data.

Results: The results showed that the participants kept social distancing of at least one meter, carried hand sanitizer whenever they went out and washed their hands frequently to avoid the contamination of the Coronavirus. The results also revealed that males and females did not have any difference in behaviour toward COVID-19. However, there was a statistically significant difference between the age categories of individuals in their behaviours toward COVID-19.

Conclusion: Overall, the public in East London city of South Africa showed positive behaviours toward COVID-19.

Keywords: behaviours, SARS-CoV-2, Coronavirus, World Health Organization, South Africa.

1. INTRODUCTION

CoronaVIrus Disease 2019 (COVID-19) is a highly contagious disease caused by a new virus belonging to the Corona family (WHO, 2020a). Coronavirus originated in the Wuhan district of China in December 2019 (Holshue et al., 2020). Within a period of a few weeks, Coronavirus was spreading like a massive outbreak all over the globe (WHO, 2020b) which eventually resulted in the announcement of COVID-19 as a global epidemic (WHO, 2020a).

The symptoms of the COVID-19 patients differ from person to person, and from symptomatic to asymptomatic (Huang et al., 2020). The patient can become sick, ranging from a common flu to severe acute respiratory syndrome Coronavirus (SARS-CoV) and Middle East respiratory syndrome Coronavirus (MERS-CoV) (Cascella, Rajnik, Cuomo, Duleboh, & Napoli, 2020). However, the common symptoms of COVID-19 are fever, breathing problems, fatigue, cough and malaise (Huang et al.,

2020). People over 65 years of age are more likely to get affected, resulting in serious complications such as acute respiratory distress syndrome (ARDS) and cytokine storm (Guo et al., 2020).

As of 31 January 2020, the confirmed cases in China were 9,720 and total deaths were 213 (WHO, 2020c). Egypt was the first country in the African continent to have Coronavirus when the first confirmed case was reported on 14 February 2020. Thereafter, 52 countries had reported with Coronavirus (WHO, 2020d).

On 26 March 2020, a national level lockdown of Level 5 was imposed by the South African government (sacoronavirus, 2020a) while the total number of confirmed cases was 927 (sacoronavirus, 2020b). On 1 May 2020, the South African government reduced the lockdown stage from level 5 to level 4 (gov, 2020a), while the total number of confirmed cases was 5,951 (sacoronavirus, 2020c). According to the World Health Organization (WHO) report issued on 31 May 2020, the total number of confirmed cases in the African continent was 100,610 and total deaths were 2,554 (WHO, 2020e). While the total confirmed cases in South Africa were 30,967, total deaths were 643 (WHO, 2020e). Despite the increase in the total number of confirmed cases and fatality rates, the government had loosened the lockdown level from level 4 to level 3 on 1 June 2020 (gov, 2020b) and from level 3 to level 2 on 18 August 2020 (gov, 2020c).

As the fatality rate was rapidly increasing globally, people experienced great disquiet, based on fear, panic emotion and unwanted anxiety that can lead some people to a critical stage in which even if they have symptoms, they will not obtain medical help immediately (WHO, 2020f). One of the lessons learnt by Hong Kong due to SARS epidemic in 2003 was that behaviour of people towards SARS disease was interconnected with their panic emotions which had led the prevention of transmitting highly contagious respiratory diseases to a complex stage (Hung, 2003). The spread of the virus can be limited if the public exhibit responsible behaviour to deal with the contagious disease (Abdelhafiz et al., 2020). As there are inadequate studies evaluating the behaviour of South African population towards COVID-19, this study was worthy for examination.

The aim of this research was to evaluate the behaviours of public toward COVID-19 in South Africa. The object of this study was the behaviours of public toward COVID-19 in South Africa. Therefore, the research questions of this study were:

1. What are the behaviours of public toward COVID-19 in South Africa?
2. Are there any differences in the behaviours toward COVID-19 between males and females?
3. Are there any differences between the age categories of individuals in their behaviours toward COVID-19?

Yıldırım, Geçer and Akgül (2020) studied the effects of fear, susceptibility and risk on behaviours of Turkish adults toward COVID-19. A cross-sectional survey was conducted for this study. Using convenience sampling, a sample of 4536 adults participated in this study. The findings revealed that handwashing frequently and avoiding public transport travel were the most common precautionary behaviours among the people. Moreover, fear, susceptibility and risk can significantly increase engagement in precautionary behaviours against COVID-19.

A study conducted at various universities in Dubai, Abu Dhabi and Al Ain examined the extent to which the participants have followed health protective behaviours to prevent COVID-19. This study also evaluated the association between the perceptions of the people toward COVID-19, their levels of anxiety and adherence to their behaviours. A sample of 634 people comprising students, staff and faculties participated in the survey. A cross-sectional survey was in this study. Findings revealed that health-protective behaviours were all positively perceived as being highly effective in battling infection, and these efficiency ratings were also positively associated with greater adherence to their behaviours (Vally, 2020).

Akafa, Amos, Okeke, and Oreh (2021) conducted research in Nigeria to explore the practices of people on the transmission of COVID-19 and the preventive measures to be taken. Using snowball sampling technique, the link of the questionnaire was sent through Facebook, Whatsapp and Instagram, and a total of 469 residents participated in the cross-sectional survey. Findings showed that majority of the people took preventive measures such as the use of hand sanitizers when they go out, washing their hands and wearing face masks. Furthermore, they stayed away from social gatherings and travel out of the province.

A study conducted in India evaluated the practice of people towards COVID-19. A sample of 2,459 participated in the survey using convenience sampling technique. A four-point Likert scale questionnaire was used for the study to collect data.

Findings revealed that 88.1% of the people indicated correct practices toward COVID-19 (Narayana et al., 2020).

A recent study was conducted by Bekele, Tolossa, Tsegaye, and Teshome (2021) to assess the practices of Ethiopian residents towards COVID-19. A quantitative approach was employed for the study and snowball sampling was used to select the people. A total of 341 people participated in the online survey. While 61% of the people were maintaining social distancing, 84% were frequently washing their hands to prevent from COVID-19.

Furthermore, another research study was conducted to identify the behaviour of the Indonesian community towards SARS-CoV-2. The online questionnaire consisted of closed-ended questions which was distributed through email and social networking sites to 34 states in Indonesia. The responses of 1,102 people from 29 states in Indonesia were successfully collected. The data were analysed using descriptive statistics. Findings showed that majority of the participants had good behaviour towards social distancing to prevent the transmission from Corona virus (Yanti et al., 2020).

2. METHODS

2.1. Research Approach and Design

This research employed a quantitative methodology. The design used to collect the data was descriptive research.

2.2. Sampling Technique, Sample and Study Site

The sample consisted of 160 adults from a population of 276,007 (Frith, 2011) located in East London city in the Eastern Cape province of South Africa. The sample size was determined using various online sample size calculators (blog.flexmr.net/sample-size-calculator, calculator.net/sample-size-calculator and aytm.com/pages/mes) with the input values 95% confidence level, 7.75% margin of error, 50% population proportion and the total population in East London. Using virtual snowball sampling technique, people who were above 17 years of age and literate in English were selected for the survey.

2.3. Data Collection Instrument

A two point Likert-scale questionnaire was developed by the researchers in Google Form that comprised two sections. The first section was used to obtain the demographic data of participants and the second section was used to obtain main data. The instrument included 12 statements with two options ("Yes" and "No") for the participants to select. The instrument was validated by a university lecturer who is an expert in research. A few additions and changes were made, upon the comments received from the expert such as to add "either by shaking hands or hugging or elbow greeting or shoulder greeting" in brackets, to add hyphen in between self and quarantine ("self-quarantine") and "infection" was changed to "contamination". His valuable inputs helped to fine-tune the instrument.

2.4. Ethical Compliances

All ethical compliances from the university where the researchers were employed were followed, and permission to conduct the study was obtained from the Metropolitan Municipality of East London. The participants gave their consent to collect their responses after reading and understanding all ethical concerns which were explained in the consent form.

2.5. Data Collection

The researchers created the questionnaire in Google Form, and the link of the survey was forwarded to all in the contact list of researchers who were in the study site. The researchers used different platforms such as WhatsApp, Facebook and email to send the link to the participants, and encouraged them to forward the link to as many people as possible who are aged 18 and above knowing English in the East London region. By visiting the link provided, the participants were directed to the page of study description and informed consent form. This survey was conducted from 27-07-2020 (12.00 AM) to 21-08-2020 (11.59PM).

2.6. Data Analysis

The survey responses collected from Google form were entered in SPSS v26, and analysed using Descriptive statistics and Analysis of Variance.

3. RESULTS

It emerged from the study that while driving 64.2% of the participants did wear a face mask (statement 1). One person did not respond to this statement. More than one third (36.3%) of the participants did now greet (either by shaking hands

Table 1. **Gender data of participants**

Gender	Frequency	Percent
Male	71	44.4
Female	89	55.6

Table 2. **Age category data of participants**

Age category	Frequency	Percent
18-25	62	38.8
26-35	62	38.8
36-45	21	13.1
46-55	10	6.3
56-65	3	1.8
Above 65	2	1.2

or hugging or elbow greeting or shoulder greeting) when they see someone they know (statement 2). It can be seen that 91.9% of the participants did keep social distancing of at least one meter (statement 3). The majority (83.8%) of the participants did believe that social distancing is an effective measure to prevent Coronavirus (statement 4). It was observed that 89.3% of the participants did wash their hands frequently to avoid the contamination of Coronavirus (statement 5). One person did not respond. Around 87.5% of the participants did carry hand sanitizer when they go out (statement 6). More than three quarters (78.6%) of the participants did use hand sanitizer immediately after touching an external surface (statement 7). About 78% of them were not against the rule of staying at home

Table 3. **Behaviours of people toward COVID-19**

#	Statements	Yes	No	Total Responded
1	Do you wear face mask while driving?	102 (64.2%)	57 (35.8%)	159 (100%)
2	Do you greet (either by shaking hands or hugging or elbow greeting or shoulder greeting) now when you see someone you know?	58 (36.3%)	102 (63.7%)	160 (100%)
3	Do you keep social distancing of at least one meter?	147 (91.9%)	13 (8.1%)	160 (100%)
4	Do you believe social distancing is an effective measure to prevent the Coronavirus?	134 (83.8%)	26 (16.2%)	160 (100%)
5	Do you wash your hands frequently to avoid the contamination of the Coronavirus?	142 (89.3%)	17 (10.7%)	159 (100%)
6	Do you carry hand sanitizer when you go out?	140 (87.5%)	20 (12.5%)	160 (100%)
7	Do you use hand sanitizer immediately after touching an external surface?	125 (78.6%)	34 (21.4%)	159 (100%)
8	Are you against to the rule of staying at home during lockdown period?	35 (22%)	124 (78%)	159 (100%)
9	Do you believe that it is your fundamental right and liberty to move around as you wish even if you are on self-quarantine?	29 (18.2%)	130 (81.8%)	159 (100%)
10	Do you wear gloves and touch your eyes, nose or mouth after touching an external surface?	16 (10.1%)	143 (89.9%)	159 (100%)
11	Do you clean and disinfect your cell phone with an alcohol content wipe or spray?	98 (61.3%)	62 (38.7%)	160 (100%)
12	Do you use service of taxis to travel now where the social distance cannot be maintained / where it is full of passengers?	78 (49.1%)	81 (50.9%)	159 (100%)

during lockdown period (statement 8). Around 81.8% of the participants did not believe that it is their fundamental right and liberty to move around as they wish even if they are on self-quarantine (statement 9). It emerged from the study that 89.9% of the participants did not wear gloves and touch their eyes, nose or mouth after touching an external surface (statement 10). More than half (61.3%) of the participants did clean and disinfect their cell phone with an alcohol content wipe or spray (statement 11). Furthermore, around 50.9% of the participants did not now use the service of taxis to travel where social distance cannot be maintained/where it is full of passengers (statement 12).

An independent-samples t-test was conducted to compare their total self-esteem scores for males and females. The continuous variable was the total self-esteem scores of all statements participants have responded on their behaviours toward COVID-19. The Categorical variables were the different gender of participants (Male and Female). From Table 4 and Table 5, there was no significant difference in scores for males ($M = 17.30$, $SD = 1.893$) and females ($M = 16.79$, $SD = 1.458$; t (158) = 1.923; p (two-tailed) = 0.056). The magnitude of the differences in the means was 0.509 with 95% CI: -0.014 to 1.032. Consequently, after comparison, results showed that males and females did not have any differences on their behaviours toward COVID-19.

Table 4. **Group Statistics**

	Please indicate your gender	**N**	**Mean**	**Std. Deviation**	**Std. Error Mean**
TOTAL	Male	71	17.30	1.893	.225
	Female	89	16.79	1.458	.154

Table 5. **Independent Samples Test**

		Levene's Test for Equality of Variances		**t-test for Equality of Means**							
		F	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**	**95% Confidence Interval of the Difference**		
									Lower	**Upper**	
TOTAL	Equal variances assumed	3.194	.076	1.923	158	.056	.509	.265	-.014	1.032	
	Equal variances not assumed			1.868	128.938	.064	.509	.273	-.030	1.049	

Table 6. **ANOVA**

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	34.771	5	6.954	2.592	.028
Within Groups	413.204	154	2.683		
Total	447.975	159			

From Table 6, one-way between groups analysis of variance (ANOVA) was conducted at a 5% level of significance (ie. ά = 0.05) to compare the different age categories of participants on their levels of scores. The continuous variable was the total score of all statements participants have responded on their behaviours toward COVID-19. The categorical variables were the different age categories of participants (Age Category 1: 18–25; Age Category 2: 26–35; Age Category 3: 36–45; Age Category 4: 46–55; Age Category 5: 56–65 and Age Category 6: Above 65). Since Sig. value in Levene's test was greater than 0.05, the assumption of homogeneity of variance was not violated. The results showed that there was a statistically significant difference at the $p < 0.05$ level in scores for the six age categories: F (5, 154) = 2.592, p = 0.028. The results of post-hoc test using the Tukey HSD showed that mean score (Table 7) for Age Category 1 ($M = 16.53$, $SD = 1.817$) was significantly different from Age Category 3 ($M = 17.86$, $SD = 1.493$). Other categories such as Age Category 2 ($M = 17.08$, $SD = 1.561$), Age Category 4 ($M = 17.70$, $SD = 1.160$), Age Category 5 ($M = 17$, $SD = 1.732$) and Age Category 6 ($M = 17.50$, $SD = 0.707$) did not differ significantly from any of the age categories. This means not all age categories had the same behaviours toward COVID-19.

Table 7. **Descriptives**

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
18–25	62	16.53	1.817	.231	16.07	16.99	12	21
26–35	62	17.08	1.561	.198	16.68	17.48	13	21
36–45	21	17.86	1.493	.326	17.18	18.54	15	21
46–55	10	17.70	1.160	.367	16.87	18.53	16	19
56–65	3	17.00	1.732	1.000	12.70	21.30	15	18
Above 65	2	17.50	.707	.500	11.15	23.85	17	18
Total	160	17.01	1.679	.133	16.75	17.27	12	21

4. DISCUSSION

The study showed that majority of the participants did wear a face mask while driving. The Department of Health and Human Services (2020) reported that one has to wear a face mask while driving if there are other people in their car who are not from the same home. However, one does not need to wear a face mask while driving if driving alone or other members in the car are from their household. The Ministry of Health of the Republic of Lithuania (2020) and the Michigan department of Health and Human Services (2020) also recommended that drivers should not wear a face mask while driving, due to potential hazards such as glasses fogging up and breathing problems. The behaviour of respondents in present study while driving could be mainly when they are with other people in a motor vehicle.

Regarding greeting, almost two third of the participants did not now greet either by shaking hands or hugging, or elbow greeting or shoulder greeting, when they see someone they know. Abdelhafiz et al. (2020) found that majority of the Egyptian adults were not greeting each other either by hand shaking or by hugging, to limit the spread of COVID-19. Therefore, findings of the present study are parallel with the findings by Abdelhafiz et al. (2020). This high level of behaviour by the participants in the present study could be mainly due to the knowledge that they have acquired through newspaper and television.

A large majority of the participants did keep social distancing of at least one meter. Narayana et al. (2020) conducted a study in India, finding that 96.9% of the participants followed social distancing when they meet others. Therefore, findings of the present study are similar to the findings by Narayana

et al. (2020). This behaviour of South Africans could be because of their better understanding on COVID-19.

More than three quarter of the participants did believe social distancing is an effective measure to prevent the Coronavirus. A study conducted in Indonesia found that a large majority of people had positive behaviour towards social distancing to prevent the spread of COVID-19 (Yanti et al., 2020). Findings of the present study are therefore in line with the findings by Yanti et al. (2020). This could be due to the adequate knowledge South Africans have on the prevention of COVID-19.

A study conducted by Abdelhafiz et al. (2020) in Egypt showed that high majority of participants regularly wash their hands which is similar to the findings of the present study. According to researchers of the present study, this is probably due to the ample knowledge that they have obtained through the visual and print media.

The survey responses revealed that majority of the participants carry hand sanitizer when they go out. Hartigan et al. (2020) stated that most of the participants take hand sanitizer and wipes for their safety purposes when they go to public places. Therefore, findings of the present study coincide with the findings by Hartigan et al. (2020). The behaviour of South Africans to stay away from Coronavirus could be the key reason to carry the hand sanitizer when they go to public areas.

The study found that more than three quarter of participants did use hand sanitizer immediately after touching an external surface. A study conducted by Ngwewondo et al. (2020) to determine the practices of Cameroonian residents toward COVID-19 preventive measures showed

that almost all the participants wash their hands and use hand sanitizers very often. Therefore, findings of the present study showed that behaviour of South Africans and Cameroonians are at the same level. Every individual must be vigilant always to keep their hands virus free and clean by using hand sanitizer, especially when they are in a public place.

The majority of participants were not against the rule of staying at home during the lockdown period. Almost all of the participants in a study conducted by Narayana et al. (2020) supported the rule of staying at home during COVID-19 pandemic. Therefore, findings of the present study are in line with the findings by Narayana et al. (2020). This positive behaviour of South Africans could be because they know COVID-19 is a serious contagious disease, and want to stay away from it.

In terms of participants' attitudes to freedom, most of them did not believe that it is their fundamental right and liberty to move around as they wish, even if they are on self-quarantine. Addo, Jiaming, Kulbo, and Liangqiang (2020) averred that the government regulations restricting personal interactions, and the ban on travelling, highly affected people's freedom. As per the view of the researchers, findings of the present study are probably because they give more importance to their safety by sacrificing a little time in their life.

Almost three quarter of the participants did not wear gloves and touch their eyes, nose or mouth after touching an external surface. Repici et al. (2020) indicated that as the gloves worn are contaminated, hands need to be sanitized or washed with soap and water after removing gloves. Therefore, findings of the present study are consistent with the findings by Repici et al. (2020). People updated their knowledge on COVID-19 by collecting information from radio, internet and television.

Almost two third of the participants did clean and disinfect their cell phone with an alcohol content wipe or spray: this could be because of the campaigns done by the Department of Health to enhance community knowledge. A study conducted by Nivette et al. (2020) indicated that people were not following some of the safety measures such as disinfecting and cleaning the cell phones. Therefore, findings of the present study were dissimilar to the findings by Nivette et al. (2020).

More than half of the participants in the present study did not use taxi services to travel, where social distancing cannot be maintained/where it is full of passengers. Centers for Disease Control and Prevention (2020) highly recommended avoidance of shared travel, such as travelling in a taxi and carpooling. This behaviour of participants in the present study could be due to the precautionary measures that they were taking to prevent the spread of COVID-19.

5. CONCLUSION

Overall, the public in East London city of South Africa showed positive behaviours toward COVID-19. They kept social distancing of at least one meter, as they believed that social distancing is an effective measure to prevent the Coronavirus; washed their hands frequently to avoid the contamination of the Coronavirus; carried hand sanitizer whenever they went out and used it immediately after touching an external surface. Furthermore, they did not either believe that it was their fundamental right and liberty to move around as they wish, even if they were on self-quarantine. nor were they against the rule of staying at home during the lockdown period. However, it should be noted that almost half of the participants used a taxi service to travel where the social distance cannot be maintained/where it was full of passengers. Finally, there was a statistically significant difference between the age categories of individuals in their behaviours toward COVID-19.

5.1. Limitations

One limitation of this study was that it included only the people from East London and did not include people from the other regions of South Africa. Another limitation was that those people who did not have smartphone and internet facility were not part of this survey. People who were illiterate in English and technology were also not able to respond to the questionnaire, which can be considered as the third limitation.

5.2. Recommendations

Despite the majority of the people in South Africa showing positive behaviour towards COVID-19, there was a minority who still did not consider COVID-19 as a serious disease. This behaviour of people will never help to stop the spread of the disease. Therefore, the government must issue a rule by law that every individual must be vaccinated irrespective of their age and vulnerability.

5.3. Implications

In order to change the behaviour of the minority, the government and health department should provide information about COVID-19 not only through social media and websites, but also by conducting counselling programmes in each and every locality.

5.4. Further Research

Further research can be done by comparing the findings of present study with the behaviours of public in other regions of South Africa.

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