An exploration of knowledge, attitude and practices towards COVID-19 prevention measures among restaurant workers in Kigoma-Tanzania

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Abstract

This article aims to assess knowledge, attitude and practices (KAPs) towards COVID-19 prevention measures in a context where the official governmental position towards COVID-19 has been changing; the implications of that official attitude to COVID -19 about community-level awareness, knowledge and practices were also determined. A cross-sectional survey was adopted and involved 200 restaurant workers from 25 restaurants conveniently selected. Field data were collected using a survey questionnaire and direct observations. A multivariate analysis was used to explain the relationships between studied variables using descriptive statistics. The study findings revealed that only 63(31.5%) of all the respondents were knowledgeable about COVID-19 and its prevention measures. It was also found that the respondents had optimistic attitudes and expected practices towards very few (4 out of 15) prevention measures. Education level was a very important factor that influenced knowledge about the disease than sex and age groups. The study also concluded that the attitude of the majority towards COVID-19 prevention is either negative or ambivalent, which in turn inhibits the implementation of the recommended COVID-19 prevention measures. This implies that COVID-19 prevention programs need to target unaware segments of Tanzanians: a more focused educational programme about COVID-19 for such groups was needed from the onset of the pandemic. As pandemics reoccur, appropriate experiences and lessons documented will contribute to more consistent responses in the future such as the issuance of objective policy statements by the country's leadership on pandemics.

Keywords: *COVID-19, Prevention Measures, Social Cognitive Theory, Health Belief Model, Pandemic Responses*

1.0. Introduction

COVID-19 has become a global health and societal emergency due to rapid transmission from human to human and through physical contact with contaminated objects (Rugarabamu, Ibrahim & Byanaku, 2020). COVID-19 has affected almost every country in the world leading the World Health Organization (WHO) to label it a pandemic and a public health emergency of international concern. In its periodic risk assessment report, the WHO classifies countries' positions concerning COVID-19 as very high risk or high risk which means that no country is free from COVID-19 (Khasawneh *et al*., 2020). Between March and April, Tanzania had a low number of cases but increased from about five patients in March 2020 to 254 patients and ten (10) deaths by April 2020 (UNDP, 2020). The impact of COVID-19 on the country has not been small. The World Bank reports that COVID -19 has led to the loss of formal 140,000 jobs and 2.2 million non-farm informal workers incurred income losses. As a result of COVID-19, it was estimated that in Tanzania 600,000 people could go below the poverty line (World Bank, 2021). According to the UNDP (2020) projections, developing countries' economies would lose at least $220 billion in income, as 207 million people could be pushed into extreme poverty by 2030.

Transmission of the COVID-19 virus can occur through direct contact with the infected people or indirectly when a person contacts surfaces or objects used by an infected

person. Thus, the prevention measures against COVID-19 include avoiding direct contact between and among persons through social distancing, lockdowns, quarantine and use of masks and washing hands with soap and water (CDCP, 2020). Despite such efforts, in many countries, there have been several 'waves' of infections and deaths rising sharply. Based on the COVID-19 alert report, by 16 June 2021, there were 176,303,596 confirmed reported cases and 3,820,026 deaths across the Globe. In the African continent, until 13th May 2020, every country had already reported COVID-19 infections; whereas until 16th June 2020, there were 3,704,424 confirmed cases in Africa (WHO, 2020).

In the specific context, Tanzania reported the first COVID-19 case on Monday 16th March 2020 that involved a citizen travelling back home from Belgium (Saleh, 2020). From that time, COVID-19 viruses spread rapidly across the country. The Lancet reporting Tanzania's position on the COVID-19 pandemic observes that when the first COVID-19 case was reported in the country, the government went along with WHO and implemented measures recommended by WHO and the health Ministry issued 15 guidelines on COVID-19. The government stance on COVID-19 and information on cases later changed. On 22nd February 2021, Sara Jerving portrays a statement by WHO Director-General Tedros Adhanom Ghebreyesus showing great concern over the Tanzanian response to COVID-19. The words used in describing the situation are denials, misinformation and lack of transparency. She also reports WHO's concern about the lack of information on COVID-19 for the past

ten months from the country (Jerving, 2021). The available data were the same as it was in early 2020. The data available with WHO show that from January 2020 to June 2021 there were 508 confirmed cases and 21 deaths (WHO, 2020).

However, recently, following the change of top leadership after the passing away of the Late President Magufuli, the new leadership under her Excellency President Samia seems to take a more positive and open approach to COVID-19 as she and her colleagues in Government wear masks and the public is urged to follow health and social guidelines against the pandemic (Kato, 2021). The outcome of the new positive attitude is yet to be known and considering that COVID-19 is new and has great negative implications for societal, health and economic wellbeing, rigorous assessment of the knowledge, attitude and practices of COVID-19 prevention measures among Tanzanian local communities is very important and needed. This could help the Government, health professionals and local communities to be informed about the level of knowledge, attitude and practices of COVID-19 prevention measures and subsequently design and implement education and awareness programs to prevent the disease.

2.0.Literature review

COVID-19 is the acronym of coronavirus disease (COVID). It is an illness caused by a novel coronavirus. According to Khasawneh *et al.* (2020), COVID-19 is the deadly third-generation corona virus (CoV) in the Corona family preceded by Severe Acute Respiratory Syndrome (SARS-CoV) in 2003 and Middle East Respiratory

Syndrome (MERS-CoV) in 2012 (Khasawneh *et al.*, 2020). Transmission of this disease occurs through direct contact with the infected when respiratory droplets from an infected person through coughing or sneezing enter the second person through the mouth, nose or eyes. Also, COVID-19 viruses are transmitted when a person comes into contact with surfaces or objects contaminated by an infected person (CDCP, 2020).

To prevent COVID-19, several measures have been recommended as classified in Table 1:

Table 1: COVID-19 prevention measures

S/N	Classification	Prevention Measures	Sources
1	Health good practices	1. Monitoring symptoms of COVID-19 such as fever, cough, shortness of breath, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain, loss of smell 2. Visiting health facilities regularly 3. Using nutrition and immunity enhancers such as citrus fruits, ginger, spinach, garlic, yoghurt and almonds, sunflower seeds, turmeric, papaya, shellfish and poultry.	Pandey *et al*. [i] CDCP [5] MoH [ii] WHO [iii] Khasawneh *et al*. [2]

2	Hygiene good practices	1. Washing hands frequently with soap and water after having been in a public place or after blowing nose, coughing or sneezing. 2. Using hand sanitisers 3. Avoid touching eyes, nose, and mouth with unwashed hands. 4. Cleaning and disinfecting frequently touched surfaces such as tables, chairs, doorknobs, light switches, countertops, handles, desks, phones, keyboards, toilets, faucets and sinks.	CDCP [5] MoH [14] WHO [12] Magoti [iv]
3	Social good practices	1. Avoid close contact with people 2. Avoid unnecessary travel or getting to public 3. Covering mouth and nose with a cloth/mask when around other people. 4. Attending congregational	Rugarabamu *et al*. [1] CDCP [5] WHO [12] Magoti [13]

		worship in churches and mosques to ask God to prevent COVID-19.	
4	Personal good practices	1. Covering all surfaces of hands 2. Covering mouth and nose with a tissue when coughing or sneezing using a cloth, mask or inside of the elbow 3. Rubbing hands together until they feel dry 4. Smoking and vaping the body.	CDCP [5] MoH [14] WHO [12] Magoti [13]

In reflection on Table 1, knowledge of COVID-19 simply means the facts, information, familiarity, awareness or understanding of prevention measures as classified into health, hygiene, social and the recommended personal good practices. Attitude refers to positive or negative feelings of individuals that determine to like or dislike to follow or use COVID-19 prevention measures as classified into health, hygiene, social and personal good practices recommended. Likewise, the term practice refers to the actual application or use of COVID-19 prevention measures as classified in health, hygiene, social and personal good practices recommended.

2.1.Social Cognitive Theory

Albert Bandura developed Social Cognitive Theory (SCT) in the 1960s. According to Bandura, learning occurs in a social context involving the interaction of a

person, the environment and behaviour (Glanz & Bishop, 2010). SCT recognizes the influence of individual experiences, actions of others, and environmental factors on individual health behaviours. The theory is considered useful in explaining health behaviour and the implementation of health interventions. There are, however, some limitations raised including the assumption that changes in the environment will automatically lead to changes in the person (McAlister *et al*., 2008). As also important influences are certain personal characteristics such as self-efficacy, behavioural capability, expectations, expectancies, self-control, observational learning and reinforcements (Glanz, 2015). Nonetheless, this theory guides change interventions and explain the way individuals or communities interact with their surroundings, the influence of social determinants on health and personal past experiences on behaviour change (McAlister *et al*., 2008). The current study used SCT to understand and explain the knowledge, attitudes and practices of local communities in Kigoma Municipality regarding COVID-19 prevention measures as issued from time to time by health authorities and professionals.

Furthermore, SCT was useful in understanding and explaining the challenges facing the implementation of COVID-19 prevention measures among the local communities in Kigoma Municipality which is the fourth specific objective of this study. This is because SCT constructs such as self-efficacy and behavioural capability can explain hesitation towards COVID-19 prevention measures and inadequate implementation of COVID-19 prevention best practices among members of Tanzania's local communities respectively.

2.2.Health Belief Model

The Health Belief Model (HBM), which was developed in the 1950s by Public Health Service social psychologists in the United States of America, asserts that people's beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explain engagement (or lack of engagement) in health-promoting behaviour (Siddiqui, Ghazal & Bibi, 2016). Although the model is widely used in health behavioural research, there are some limitations. It attempts to predict health-related behaviours through only individual differences in beliefs and attitudes. Other factors influencing health behaviours such as habitual health-related behaviours of individuals are not considered (Carpenter, 2010). To counter the limitations, it is suggested that it was necessary to reduce barriers to action by providing education and support that enhances self-efficacy and the likelihood of successful behaviour changes (Carpenter, 2010). In line with this model, it means that to implement COVID-19 prevention measures, there must be educational efforts to bring about behavioural changes towards frequently washing hands, the use of hand sanitiser, avoiding touching eyes, nose, and mouth with unwashed hands and cleaning and disinfecting frequently touched surfaces and objects.

2.3.Empirical studies

Rugarabamu et al. (2020) conducted a quick online cross-sectional survey on the knowledge, attitude and practices (KAPs) towards COVID-19 among Tanzanian residents during the April –May 2020 period of the epidemic

covering 400 samples of online Tanzanian residents. It was found that overall, (84.4%) of participants had good knowledge significantly associated with education levels. Nearly all of the participants (96.0%) had confidence that COVID-19 will be eliminated. The majority of the respondents (77%) did not go to crowded places in recent days. Multiple linear regression analysis showed that the male gender of age-group 16-29 years, and secondary education or lower was significantly associated with lower knowledge scores. As this online survey targeted and reached mostly the educated, it informs very little about the knowledge of different segments of the Tanzanian local communities regarding COVID-19 prevention measures, particularly in a country where there have been mixed messages as to the magnitude and urgency of the problem.

Michael *et al*. (2020) conducted a cross-sectional survey on awareness, attitude and actions related to COVID-19 among adults with chronic conditions at the onset of the outbreak in the United States. A cross-sectional survey linked to 3 active clinical trials and 1 cohort study was used for 630 adults aged 23 to 88 years living with 1 or more chronic conditions. The results showed that black participants who lived below the poverty level and had low health literacy were more likely to be less worried about COVID-19, or do not believe that they would become infected, and feel less prepared for an outbreak. Such individuals are unwilling to practice COVID-19 prevention measures instead, they continue with normal daily routines and behaviours. It is thus important to see how these findings correspond to what is happening

among the local communities of somewhat similar characteristics in Tanzania.

Khasawneh *et al*. (2020) conducted a cross-sectional descriptive study on knowledge, attitude and precautionary measures against COVID-19 among medical students in Jordan during an outbreak of disease between the 16th and 19th of March 2020. The findings showed that the majority of the respondents believed that handshaking (93.7%), kissing (94.7%), exposure to contaminated surfaces (97.4%) and droplet inhalation (91.0%) are the primary mode of transmission of COVID-19. In response to the COVID-19 pandemic, more than 80.0 per cent of the respondents adopted social isolation strategies, regular hand washing and enhanced personal hygiene measures as their first line of defence against the virus. The researchers concluded that Jordanian medical students showed the expected level of knowledge about the COVID-19 virus and implemented proper strategies to prevent its spread.

In another study, Pandey *et al*. (2020) assessed the level of awareness amongst the Indian population regarding COVID-19. This survey was conducted among 745 and the findings indicated that many individuals learned about COVID-19 through social media and news and were aware of the mode of spread of the virus and also the steps to be taken to prevent the disease from spreading. But many other people were also not fully aware of the age groups this virus will be affecting. There was a belief that COVID-19 affected the elderly and those with chronic disease conditions which in turn could promote

carelessness regarding COVID-19 prevention to other segments. The upsurge of infections in India labelled catastrophic by the WHO is possibly a result of the relaxation of restrictions and inadequate information and understanding on COVID-19 (Smriti, 2021). Tanzanian local communities may be as vulnerable when the public is less concerned about COVID-19 for similar reasons.

Al-Hanawi *et al*. (2020) investigated the knowledge, attitudes, and practices of the Saudi public, toward COVID-19 during the pandemic using a cross-sectional research design with a total of 3,388 participants. The results showed that the majority of the study participants who were knowledgeable about COVID-19 showed optimistic attitudes towards COVID-19 and practised prevention measures against COVID-19. However, the results indicated men have less knowledge, show less optimistic attitudes, and practiced fewer preventive measures against COVID-19 than women did. Also, older people were seen as likely to have better knowledge and observed preventive practices, unlike younger people. Following these results, the researchers suggest that targeted health education interventions should be directed to the vulnerable population who may be at increased risk of contracting COVID-19.

Generally, the above studies looked at the knowledge, attitude and practices toward COVID-19 prevention measures among the studied populations. The COVID-19 context in Tanzania as stated earlier was initially similar to the context of other parts of the world in respect of the national response to the pandemic. But this significantly

changed as if the country was insulated against COVID-19. Hence, the generalization of the findings of the earlier stated studies to the local community context in Tanzania can be limited. Therefore, to re-enforce studies on COVID-19 in Tanzania and to address significantly the research gap, this paper assesses knowledge, attitude and practices towards COVID-19 prevention measures among local communities in Tanzania.

3.0.Methodology

3.1.Research Design and Study Area

A cross-sectional survey design was adopted to facilitate the analysis of data of variables collected at one given point in time across a sample population (Michael *et al*., 2020). This survey was conducted in Kigoma Municipality in the eastern zone of Tanzania since the local communities are possibly at high risk of COVID-19 pandemic due to interactions with travellers to and from neighbouring countries of the Congo DRC, Burundi and Rwanda.

3.2.Sample and Sampling

The restaurant workers formed the units of analysis whereby 200 of them from 25 restaurants in Kigoma Municipality were selected for the survey. Eight workers from each restaurant were involved in the study. Restaurants are service points that bring together people in closed environmental settings that have been significantly affected by the pandemic as restaurants are closed or provide limited services in preventive efforts against COVID-19 (Yang *et al*., 2020). In Tanzania, where there have been no lockdowns and closing of businesses; the least that could be done is to raise awareness and the provision of the needed knowledge among service-providing staff. A survey questionnaire was designed and administered to all respondents whereby 105 (52.5%) respondents completed the questionnaire themselves while the rest 95 (47.5%) completed the questionnaires with the assistance of the researcher and two research assistants.

3.3.Data Collection and Analysis

The questionnaire comprised open-ended and closed-ended questions that were adapted from other studies (i.e., Rugarabamu *et al*., 2020; Al-Hanawi *et al.*, 2020; Pandey *et al*., 2020; Michael *et al.*, 2020). The open-ended questions were on knowledge about COVID-19 while the closed-ended questions were on the attitudes, practices and challenges towards COVID-19. A 3-point Likert scale was used to make it simple for the respondents to distinguish the options (Peng *et al*., 2014). Again, direct observations were conducted using an observational checklist. This enabled observations and recording of practices of the respondents on frequent washing hands with soap and water, using hand sanitisers and covering the mouth and nose with a cloth/mask. In each restaurant, the observations were scheduled during the crowded periods from 08:00 to 11:00 a.m. during breakfast, 12:00 to 3:00 p.m. during lunch or 7:00 to 9:00 p.m. during dinner.

The collected data were analysed quantitatively using univariate analysis and descriptive statistics with the aid of Microsoft Excel program 2013 and Statistical Package for Social Sciences (SPSS) program version 20. Univariate analysis was used to portray the frequency of the distribution of the respondents by age, sex and education level. It was also used to analyse observational data to portray the frequency of the distribution of the respondents towards the use of COVID-19 prevention measures. Multivariate analysis was used to portray the pattern of relationships between different data sets whereby the frequency of the occurrence of each response

was determined and compared with each other; and the results were presented using tables, total scores, mean values and standard deviations. The mean values were used to compare the items whereby all mean values from 2.5 and above per the 3-point Likert scale were considered to be acceptable information as noted by Rugarabamu *et al.* (2020).

4.0.Results

4.1.Distribution of Respondents by Age, Sex and Education Level

The age, sex and education level of the respondents of this study were as shown in Table 2.

Table 2: Age, sex and education level distribution of the respondents (n=200)

Characteristic	Classification	Frequencies	Percentages
Age	Between 18 and 24 years old	46	23
	Between 25 and 34 years old	81	40.5
	Between 35 and 44 years old	35	17.5
	Between 45 and 54 years old	25	12.5
	55 years and above	13	6.5
	Total	200	100
Sex	Male	54	27
	Female	146	73
	Total	200	100
Education level	No formal education	22	11

	Primary education	93	46.5
	Secondary education	49	29.5
	Technician certificate	21	10.5
	Ordinary diplomas	11	5.5
	Bachelor degree	4	2
	Master degree	0	0
	Total	**200**	**100**

Source: Field data (2021)

Table 2 indicates a wide distribution of age groups among the respondents and hence could portray accurate, true and reliable information about knowledge, attitude and practices towards COVID-19 among Tanzanian communities. Also, despite the presence of fewer males 54 (27%) compared to females 146 (73%) in the sample – the service characteristics may have determined the gender distribution among the respondents, the statistic was still informative since Tanzania's population is characterised by more females than males per 2012 national population census. Further, the results indicated a wide distribution of the respondents by education level which is the reality of the Tanzanian local communities per the 2012 national population census.

4.2. Knowledge about COVID-19 Prevention Measures

The verbal responses of the respondents on what they knew about COVID-19 were compared against the standard answers which were established based on four

parameters: 1) illness caused by a novel coronavirus, 2) respiratory infections/disease caused by coronavirus discovered for the first time in December 2019, 3) pandemic disease characterized by rapid transmission through direct contact with an infected person or touching contaminated surfaces or objects, 4) viral disease leading into more serious respiratory infections. The distribution of the respondents by numbers of correct answers, incorrect answers and do not know about COVID-19 are shown in Figure1.

Figure 1: Distribution of the respondents by numbers of the correct answers, incorrect answers and do not know about COVID-19

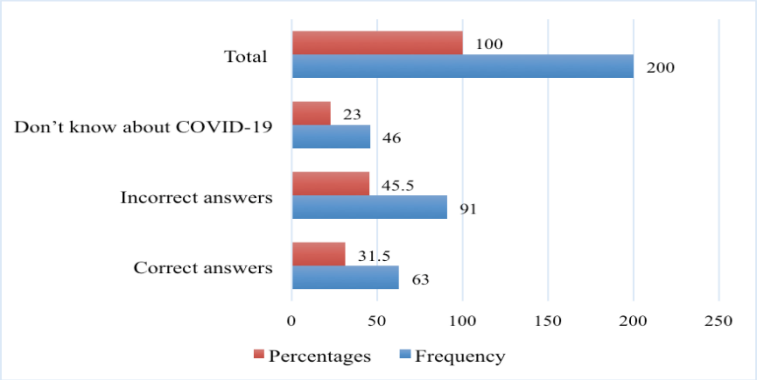
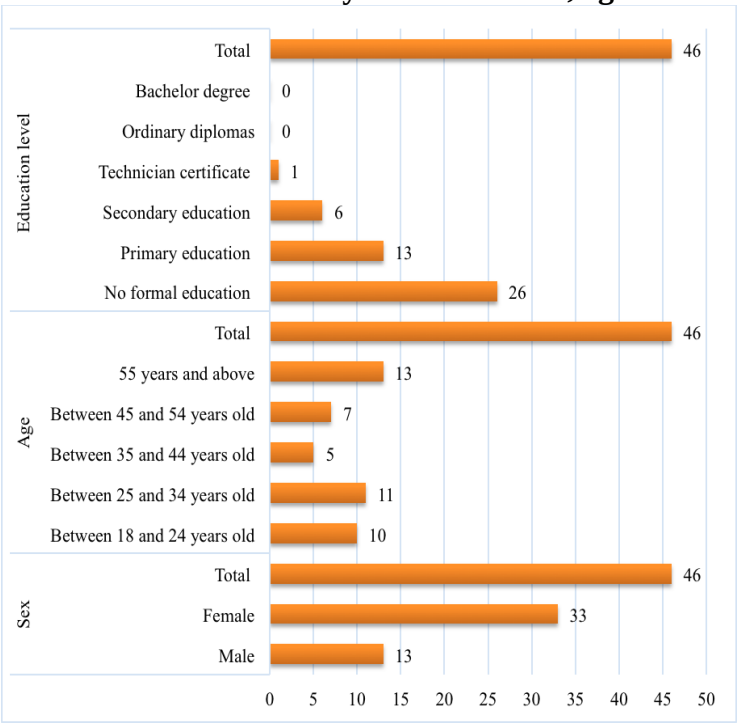


Figure 1 shows that 63(31.5%) respondents provided correct answers about COVID-19 and hence, these were knowledgeable about this pandemic disease. About 91(45.5%) other respondents provided incorrect answers about COVID-19. Some of these respondents believed that COVID-19 was not a viral disease while others believed that the disease could be transmitted directly by

inhaling contaminated air something which is not correct. The rest, 46(23%) of the respondents said they did not know about COVID-19.

Further, 46 respondents who did not know what COVID-19 are analysed by education level, age and sex. The results are shown in Figure 2.

Figure 2: Distribution of 46 respondents who did not know about COVID-19 by education level, age and sex



Based on Fig.2, the majority (26(56.5%) had no formal education. The number decreased with an increase in education levels from 13(28.3%), 6(13%) and 1(2.2%) for Primary education, Secondary education and Technician certificate, respectively to 0% for Ordinary diplomas and Bachelor degrees. This implies that knowledge about COVID-19 was very low among the respondents who had no formal education.

Also, Figure 2 shows that among 46 respondents who did not know about COVID-19, 10(21.7%) were between 18 and 24 years of age while 11(23.9%) were between 25 and 34 years. Also, 5(10.9%) of the respondent were between 35 and 44 years. About 7(15.2%) of the respondents were between 45 and 54 years old. Lastly, about 13(28.3%) of the respondents were 55 years old and above. These results showed an uneven distribution of the respondents who did not know about COVID-19 by age hence, the age of the respondents was not an important determinant of knowledge about COVID-19.

Again, Figure 1 shows that among 46 respondents who did not know about COVID-19, 13(28.3%) were males and the rest, 33(71.7%) were females. These results could have been accounted for by the fact that males were very few, 54(27%) in the study sample compared to females 146(73%) – uncooperative behaviour of men and generally there being more women waitresses than waiters in most restaurants led to fewer women respondents – and hence, was not an important determinant of knowledge about COVID-19 among restaurant workers.

4.3.Knowledge of the respondents about COVID-19 prevention measures

The verbal responses provided by the respondents on COVID-19 recommended prevention measures were compared against standard answers established by this study. A summary of the results is as shown in Table 3.

Table 3: Distribution of the respondents by knowledge about COVID-19 prevention measures

S/N	Categories	Frequency	Percentages
1	Not knowledgeable about COVID-19 prevention measures	50	25
2	Somewhat knowledgeable about COVID-19 prevention measures	55	27.5
3	Knowledgeable about COVID-19 prevention measures	68	34
4	Very knowledgeable about COVID-19 prevention measures	27	13.5
5	**Total**	**200**	**100**

Table 3 shows that 50(25%) respondents were not knowledgeable about COVID-19 prevention measures. Most of them comprised the 46 (92%) respondents who did not know about COVID-19 and had no formal education. Also, 55(25.5%) respondents were somewhat knowledgeable about COVID-19 prevention measures. The majority (68(34%)) of the respondents were knowledgeable about COVID-19 prevention measures while the rest, 27(13.5%) were very knowledgeable about COVID-19 prevention measures. These results imply further that the majority of the respondents who did not know about COVID-19 and had no formal education are less knowledgeable about COVID-19 prevention measures. Interestingly, from primary education through secondary education to Bachelor's degrees, the level of knowledge about COVID-19 preventive measures increased.

4.4.Attitude towards COVID-19 Prevention Measures

This involved requiring the respondents to indicate the extent that they felt to like or dislike the use of COVID-19 prevention measures. A summary of the results is shown in Table 4:

Table 4: Statistic on attitudes of respondents towards COVID-19 prevention measures (n=200)

S/N	Category	Preventive measure	Total	Mean value	Standard deviation
1	Health good practices	Monitoring symptoms of COVID-19 such as fever, cough, shortness of breath, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain, loss of smell	520	2.60	1.013
		Visiting health facilities regularly	352	1.76	0.686
		Using nutrition and immunity enhancers such as citrus fruits, ginger, spinach, sunflower seeds, papaya, shellfish and poultry	292	1.46	0.568
2	Hygiene good practices	Washing hands frequently with soap and water	504	2.52	0.982
		Using hand sanitisers	306	1.53	0.596
		Avoid touching eyes, nose, and mouth with unwashed hands.	382	1.91	0.774
3		Cleaning and disinfecting, frequently touched surfaces such as tables, chairs and doorknobs	428	2.14	0.833

		Avoid close contact with people	266	1.33	0.518
	Social good practices	Avoid unnecessary travel or getting to public	260	1.30	0.507
		Covering mouth and nose with cloth/mask when around other people.	510	2.55	0.994
4		Attending congregational worship in churches and mosques to ask God to prevent COVID-19.	300	1.50	0.584
	Personal good practices	Covering all surfaces of hands	244	1.22	0.475
		Covering mouth and nose with a tissue when coughing or sneezing	554220 258	2.77 1.10	1.079 0.429
		Rubbing hands together until they feel dry		1.29	0.503
		Smoking and vaping the body.			

Regarding health good practices, Table 4 shows that monitoring symptoms of COVID-19 such as fever, cough, difficulties in breathing, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain, and loss of smell had a mean value of 2.60 and was the only acceptable information on COVID-19 prevention measure about which the respondents had optimistic attitudes. Next, in terms of hygienic good practices, the results in Table 4 show that frequently washing hands with soap and water had a mean value of 2.52 and was the only acceptable information on COVID-19 prevention measure the respondents had an optimistic attitude.

Furthermore, based on social good practices, the results in Table 4 show that covering the mouth and nose with a cloth/mask when around other people had a mean value of 2.55 and was the only acceptable information regarding COVID-19 prevention measures the respondents had an optimistic attitude. Moreover, in terms of personal good practices, the results in Table 4 indicate that covering the mouth and nose with a tissue when coughing or sneezing had a mean value of 2.77 and was the only acceptable COVID-19 prevention measure the respondents had an optimistic attitude.

4.5.Practices of COVID-19 Prevention Measures

This involved asking the respondents to indicate the extent to which they agreed or disagreed with the use of COVID-19 prevention measures. A summary of the results is shown in Table 5.

Table 5: Statistic of responses on the practices of COVID-19 prevention measures (n-200)

S/N	Category	Preventive measure	Total	Mean value	Standard deviation
1	Health good practices	Monitoring symptoms of COVID-19 such as fever, cough, shortness of breath, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain, loss of smell	554	2.77	1.079
		Visiting health facilities regularly	300	1.50	0.584
		Using nutrition and immunity enhancers such as citrus fruits, ginger, spinach, sunflower seeds, papaya, shellfish and poultry	266	1.33	0.518
2		frequently washing hands with soap and water	538	2.69	1.048

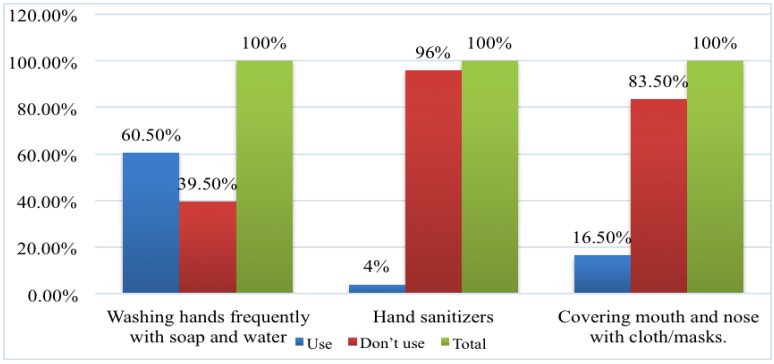
		Using hand sanitisers	222	1.11	0.432
		Avoid touching eyes, nose, and mouth with unwashed hands.	380	1.90	0.740
	Hygiene good	Cleaning and disinfecting frequently touched	448	2.24	0.873
3	practices	surfaces such as tables, chairs and doorknobs			
		Avoid close contact with people			
		Avoid unnecessary travel or getting to public	282	1.41	0.549
		Covering mouth and nose with cloth/mask when	260	1.30	0.507
		around other people.	520	2.60	1.013
4		Attending congregational worship in churches			
	Social good	and mosques to ask God to prevent COVID-19.	300	1.50	0.584
	practices	Covering all surfaces of hands			
		Covering mouth and nose with a tissue when			
		coughing or sneezing	240	1.20	0.468
		Rubbing hands together until they feel dry	540	2.70	1.052
	Personal	Smoking and vaping the body.	204	1.02	0.397
	good		242	1.21	0.471
	practices				

According to Table 5, health good practice of monitoring symptoms of COVID-19 such as fever, cough, difficulties in breathing, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain, and loss of smell had a mean value of 2.77 and was the only acceptable information about COVID-19 prevention measure among the respondents. In terms of hygiene good practices, results in Table 5 show that frequently washing hands with soap and water had a mean value of 2.69 and was the only acceptable information regarding COVID-19 prevention measure among the respondents.

Regarding social good practices, results in Table 5 reveal that covering the mouth and nose with a cloth/mask when around other people had a mean value of 2.60 and was the only acceptable information regarding COVID-19 prevention measure among the respondents. Likewise, among personal good practices, results in Table 4.5 show that covering the mouth and nose with a tissue when coughing or sneezing had a mean value of 2.70 and was the only acceptable information regarding COVID-19 prevention measure among the respondents.

Comparatively, direct observational data on the use of COVID-19 prevention measures among the restaurant workers on three prevention measures frequently washing hands with soap and water, using hand sanitisers and covering the mouth and nose with a cloth/mask are as shown in Figure 3.

Figure 3: Observation data regarding the use of the three COVID-19 prevention measures



According to the results in Figure 3 frequently washing hands with soap and water was used by the majority, 121(60.5%) of the respondents. Only 79(39.5%) did not use this COVID-19 prevention measure. This confirmed that washing hands frequently with soap and water was the frequently used COVID-19 prevention measure among the respondents. However, results in Figure 3 show further that hand sanitisers was used by 8(4%) of the respondents only. The majority (192(96%)) of the respondents did not use it. This confirmed that hand sanitisers were not acceptable COVID-19 prevention measures among the respondents. Results in Figure 3 show further that covering the mouth and nose with cloths/masks was used by only 33(16.5%) of the all respondents. The majority (167(83.5%)) of the respondents did not use facemasks. This is contrary to the results shown earlier in Tables 4 and 5 about attitude and practice on this prevention measure.

5.0.Discussions and Conclusion

5.1.Discussions

This study found that restaurant workers had different levels of knowledge about COVID-19 and its prevention measures that in turn could affect the use of these prevention measures to prevent the disease. For instance, about 23 per cent of all respondents, did not know about COVID-19 while 45.5 per cent were unable to provide correct answers about COVID-19. These respondents constituted the majority of 25 per cent of the respondents who were not knowledgeable about COVID-19 prevention measures. Interestingly, 56.5 per cent of the respondents who were not knowledgeable about COVID-19 and its prevention measures had no formal education. This means that a lack of formal education prevented the respondents from knowing about COVID-19 and its prevention measures. It is also safe to say that Tanzania's local communities who lack formal education are excluded from access to factual information and awareness about COVID-19 and are likely to get the disease. This is because much information about this disease is provided through social media and written information that is not friendly to the illiterate and low-income persons (Pandey *et al*., 2020).

The results support the Social Cognitive Theory in the sense that lack of access to formal education acts as an inhibitor to the reception of certain factual information about COVID-19 and its prevention measures issued from time to time by relevant authorities. Same results were reported by Rugarabamu *et al*. (2020) during a quick online cross-sectional survey on the knowledge, attitude and practices (KAP) towards COVID-19 among Tanzanian residents. The results revealed that the respondents who held a bachelor's degree

and above had a more correct score regarding knowledge, attitudes and practices towards COVID-19. The current study concurs with the results in a study by Rugarabamu *et al*. (2020) who reported that some segments in the local communities have very low or no knowledge of COVID-19 prevention measures but they did not identify such segments of the community adequately, as to whether they related to age or education level.

However, the current study provides different results from those provided in previous including Al-Hanawi *et al*. (2020) who revealed that men had less knowledge about COVID-19 than was the case with women. It also showed that older adults were likely to have better knowledge and practices towards COVID-19 than younger people. In the current study, both sex and age are irrelevant determinants of knowledge about COVID-19 and its prevention measures. These deviations could be accounted for by differences in culture between Tanzanian and Saudi Arabia.

Regarding attitudes of the respondents towards COVID-19 prevention measures, the current study established that the respondents had optimistic attitudes towards very few (4 out 15) COVID-prevention measures namely, monitoring symptoms of COVID-19, frequently washing hands, covering mouth and nose when around other people and when coughing or sneezing. These measures had mean values = 2.60, 2.52, 2.55 and 2.77 respectively. Based on the current study, restaurant workers had different attitudes toward the COVID-19 prevention measures recommended by CDCP (2020), MoH (2020) and WHO (2020[a]). The study also generated important insights into the attitudes of the communities towards COVID-19 prevention measures reported by previous studies. The majority of these studies including Michael *et al*. (2020) in the United States and Khasawneh *et al*. (2020) in Jordan did not specify the attitude of the local communities towards various preventive measures whether within health good practices, hygiene good practices, social good practices and personal good. The current study agrees with the Health Belief Model that asserts that people's beliefs about perceived benefits of action, barriers to action and self-efficacy explain the engagement in health-promoting behaviour (Carpenter, 2010). This means that the failure of restaurant workers to engage in most of the COVID-19 prevention measures is accounted for by perceived benefits, barriers to action and self-efficacy toward prevention measures. This requires deliberate actions to increase knowledge and promote adherence to appropriate health practices among the restaurant workers.

Moreover, on the practices of COVID-19 prevention measures, the current study establishes that restaurant workers practised only 4 out of 15 COVID-19 prevention measures. These measures were monitoring symptoms of COVID-19 (mean value 2.77), frequently washing hands with soap (mean value 2.69), covering the mouth and nose with a cloth/mask when around other people (mean value 2.60) and covering the mouth and nose with a tissue when coughing or sneezing (mean value 2.70). These prevention measures were also the ones which respondents had an optimistic attitude about.

The Government message on COVID-19, in the early days when the pandemic received attention, emphasised the same preventive measures: monitoring symptoms, washing hands with soap and wearing masks or covering the nose and mouth with a cloth. This

means that individuals' optimistic attitudes towards COVID-19 prevention measures are very important determinants of the use of particular prevention measures. Optimistic attitudes and other positive results are also achieved through education and communication among the public in creating and maintaining awareness about COVID-19. There is of course little to gain if successful initial efforts are abandoned and the public becomes misinformed and disinterested about its fate in respect of clear and present health and life hazard.

5.2.Conclusion

The local communities with formal education in Kigoma seem to have little or no knowledge about COVID-19 and its prevention measures issued by the Government, Health authorities and professionals from time to time. However, the risky situation is much higher for those who are frequently in contact and share objects and surfaces with the infected persons or persons travelling to and from countries where COVID-19 cases are high. The hotel service workers, as members of the community, are therefore at high risk of getting this pandemic disease. The attitude of the majority of the Tanzanian local community members such as restaurant workers toward COVID-19 prevention is negative or ambivalent at most, which in turn inhibits practices of the recommended COVID-19 prevention measures. Optimistic attitudes and hence, practices of the respondents were towards very few (4 out of 15) prevention measures including, monitoring symptoms of COVID-19, frequently washing hands with soap and water, covering mouth and nose with a cloth/mask when around other people and covering mouth and nose with a tissue when coughing or sneezing. COVID-19 prevention programs needs to consider the existence of segments of Tanzanians who have no or little knowledge of COVID-19, the knowledge that is spread through written information. The relevant programmes would focus on enhancing knowledge and awareness to all segments and instilling optimistic attitudes towards the majority on COVID-19 prevention measures which the respondents neither had an optimistic attitudes about nor did they practice. Several challenges towards the implementation of COVID-19 prevention measures are the dislike of changing behaviours by adopting COVID-19 prevention good practices, limited knowledge about COVID-19 prevention measures, lack of sensitization towards COVID-19 prevention and good practices by the government, limited knowledge on how to use COVID-19 prevention measures and impracticality to some of the COVID-19 prevention measures. The Government is currently adopting a changed positive attitude towards COVID-19, this change needs to be complemented by more open and nationwide efforts of increasing awareness of the potential risks to infection and adherence to some key prevention measures particularly those that show to be positively considered and can be easily practised such as washing hands and covering mouths and noses in enclosed crowded places, and the like. Some consistency and objectivity in state policies and actions supported by current realities are proposed on pandemics.

6.0.References

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