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Covid-19 Burden in the Traditional Market: The Risk Factors

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ABSTRACT

Background: The report that the earliest cases of Covid-19 were recorded in a food market makes one to suspect that the market could be the primary source of the community spread of the pandemic. In this study, we investigate the traditional markets for socio-demographic factors that may promote the spread of Covid-19 in the community.

Objective: To identify the socio-demographic factors that may promote the spread of Covid-19 in the markets and the community at large.

Methods: This was a prospective study of the physical composition of traditional markets, trading patterns of people and compliance with Covid-19 safety protocols in the traditional markets. A proforma form was designed for data acquisition

Results: The result shows that the traditional markets consist of 83.17% open structures with propensity for overcrowding due to unrestricted influx of people. The business hour stretches over a long period, sometimes and in some places, from dawn till dusk. There was poor compliance across all the criteria for Covid-19 safety protocols and especially physical distancing.

Conclusion: This study shows that overcrowding, long duration of business hours and failure to comply with safety protocols and especially physical distancing are the risk factors for spreading Covid-19 in the traditional markets and the community at large. While no stone should be left unturned in the fight against Covid-19, there is the need to pay special attention to the traditional markets so as to curtail Covid-19 infection now and another pandemic in the future.

Introduction

The traditional market is an indispensable unit of a community. However, reports that the earliest known cases of Covid-19 infection were linked to food markets makes one to suspect that the market could be the primary source of the community dissemination of the pandemic. According to the World Health Organization, some of the earliest known cases of Covid-19 had a link to a wholesale food market in Wuhan city, China and many of the initial patients were

stall owners, market employees, or regular visitors to this market. The environmental samples taken from this market in December 2019 tested positive for the coronavirus [1]. Also, Rahimi et al noted that several people infected with an unknown and unusual pneumonia at the beginning of year 2020 that led to the discovery and introduction of a new type of coronavirus known as Covid-19 were in the seafood, poultry and live animals' market in Wuhan City (Hubei Province, China) [2]. In Lima (Peru), an estimated 79% of

vendors in the open air retail food markets had fallen ill with Covid-19 at the time of the report [3]. Thus, it seems the market bears certain features that bait Covid-19 thus marking it out as the primary source of Covid-19. Epidemiologically, Covid-19 is spread by breathing in infected droplets and or by direct contact with contaminated fomites such as other people's hands, door knobs, toys, telephones, computer key boards and money [4]. This mechanism of spread is similar to that of the common cold virus. As stated by John Oxford, cited by Rebecca, about half of all common cold viruses are transmitted via the hands, with the rest caught by breathing in infected droplets that others have sneezed out [5]. Generally, a single sneeze produces more than 40,000 droplets of moisture and millions of germs, propelled over a distance of 32 feet [5]. Given this mechanism of spread, it becomes evidently clear that crowded places such as traditional markets are particularly prone to the Covid-19 pandemic if there is failure to comply with the Covid-19 safety protocols.

In the African setting, the traditional market is the most widely patronized for goods and services. For instance, there are handy laborers who could respectively 'download' and 'upload' goods for sellers and buyers in the markets. Also, the traditional markets provide readymade markets for cheap and staple food. Hence, the traditional market is attractive to buyers and the human traffic can sometimes be unusually heavy. It is noteworthy that; of all crowded places such as schools, religious, sports and entertainment centers, only the market, particularly the food market, is indispensable. Furthermore, the traditional market is a place where communication, one on one, is essential. Interestingly, many of the traders and buyers are not known to one another just as patronage is dynamic and daily turnover could be extremely large. Although, in our setting, there has not been empirical study of the prevalence of Covid-19 in the traditional markets, observation has shown that the traditional markets could be the epicenter of Covid-19, more so, that the behavioural risk factors of Covid-19 have been found in our locality. For instance, there have been reports that hygiene etiquettes such as sneezing and coughing into the sleeves or crook of the elbow are poor among the people in the study locale. According to Olajuyin et al, majority of the people in Ekiti State, the study setting, characteristically sneeze or cough into the air without a cover on their nose or mouth [6]. Also, in Nigeria, the study setting, compliance with the Covid-19 safety protocols has been a challenge. In their report, Ebere et al averred:

"Compliance has remained a concern, especially in Nigeria" [7]. In view of the prevailing risk factors and global reports of Covid-19 in the traditional markets, it behoves on researchers to determine the socio-demographic risk factors that could facilitate the spread of Covid-19 in the traditional markets and the community at large. This is the basis for this study. The aim is to sensitize the stakeholders to the role of the traditional market in the spread of Covid-19 with a view to develop strategies to nib the spread of the pandemic in the bud [8,9].

Methodology

Study setting

This was a prospective study of the physical composition of, trading patterns and compliance with Covid-19 safety protocols in the traditional markets. The study was conducted between June 2020 and September 2020 at the three geopolitical (senatorial) districts of Ekiti State, South West, Nigeria.

Study design and data collection

Using a systematic random technique, fifteen traditional markets were selected by balloting. A proforma form was used by field workers for data acquisition. The acquired information consisted of demographic data, socio-cultural characteristic, trading patterns and compliance with physical distancing, use of face masks, hand washing with water and soap, hand sanitization and use of infrared thermometer for body temperature measurement. The compliance with the Covid-19 safety protocols were rated on a 5 point scale with a score of 1 being very poor and a score of 5 being very good. The rating was conducted by the field workers who observe the number of persons that; wore facemasks, washed hand with water and soap, used hand sanitizer, had their temperature checked with infrared thermometer and maintain the recommended physical distance. For every 20 persons, the number of people that comply with each of the Covid-19 safety protocol were noted and recorded as follows:

1. 0-4 persons=1 (Very Poor)
2. 5-8 persons=2 (Poor)
3. 9-12 persons=3 (Fair)
4. 13-16=4 (Good)
5. 17-20=5 (Very Good).

Data analysis

This was done using Statistical Program for Social Sciences (SPSS IBM) software version 20 using simple descriptive statistics.

Results

Of the 15 traditional markets, 9 (60%) are major markets, 4 (26.7%) are intermediate while 2 (13.3%) are minor markets. Five (33.3%) of the major markets are daily markets while 2 operate on a 5 day interval. The intermediate and minor markets operate on a 5 day interval. The markets are in three main segments as open air, open stalls and locked up shops. Overall, the frequency distribution of the three types of markets is shown in Figure 1. The markets were characteristically overcrowded, clustered and lengthy in business hours. Goods, especially in the open air section are usually displayed in haphazard manner. The markets are patronized by all and sundry with no familiarity, no known address and no traceable contact details. The comparative scores for the compliance across all the criteria for Covid-19 safety protocols are shown in Figure 2. The enforcement of compliance with the Covid-19 safety protocols was found to be inconsistent in the traditional markets.

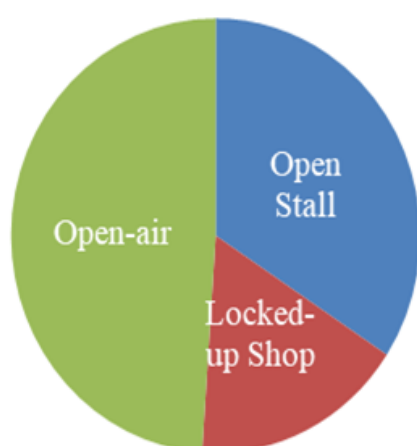


Figure 1. Percentage distribution of the types of traditional markets in the study locale

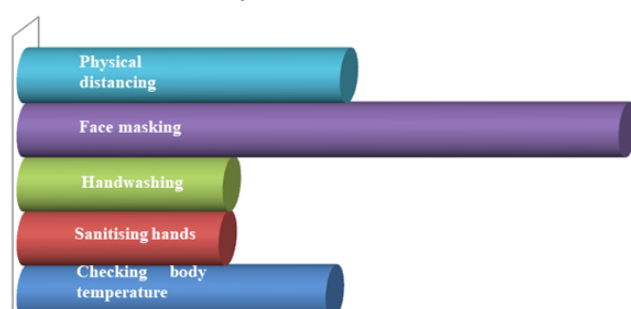


Figure 2. Relative compliance with the individual covid-19 safety protocols in the traditional markets (TM)

Discussion

The reported linkage of the earliest known cases of Covid-19 to the food market raises one's suspicion that the traditional markets could be the primary source of community spread of the pandemic. This

study, which examined the traditional markets for socio-demographic factors that may facilitate the spread of Covid-19, observed that the traditional market in its most part operate in the open air. This characteristic feature may predispose the market not only to uncoordinated influx of people but also overcrowding thereby facilitating the spread of Covid-19. This was the observation of Oluwadiya et al, that crowded places can increase the spread of Covid-19 (8). Also, the crowded markets, due to long hours of business transactions, could expose sellers to buyers many of who are strangers and could be Covid-19 positive. Another factor of importance is the haphazard manner with which goods and wares are displayed in the open air markets. As observed, traders usually displayed their wares in disordered manner such that buyers spend more time than necessary in search of products. This is even made worse by the flagrant refusal to allow orderly rearrangement of the wares by the local council agents. For example, there are traders who would refuse to shift base on the apprehension of losing sales if they are relocated to another site. This is in support of Irwin that people routinely do not do what is good for them and refuse to cease behavior that is bad for them (9). This attitude which often leads to clustering in the traditional markets could increase the vulnerability to and spread of Covid-19 in the community.

This study showed that compliance with physical distancing in the traditional markets was very poor with an average score of 1.60 on the 5 point scale. Previous study has shown that compliance with physical distancing is a major challenge in our setting (7). In the present study however, the poor compliance with physical distancing could be due to overcrowding which gives people no breathing space, especially in the major markets. Other reason could be ignorance of the risks of clustering among the people. It could also be due to defiance to the recommended guidelines. As noted by Oluwadiya et al, about 50% of their respondents believed Covid-19 is being hyped or politically influenced (8). Therefore, of what use is to fight what 'does not exist?' People may surmise, albeit wrongly.

The use of facemask as a measure for the containment of Covid-19 in the traditional markets was relatively better than the use of other safety measures. This is in concordance with the previous study in the same locality where the most practiced containment measure of Covid-19 was the use of facemask (8). However, in the absolute term, this finding does not hold water as the use of facemasks was generally low in the traditional markets. As found, the compliance score on the 5 point scale was 2.98. The reason for

the poor usage of facemask in the traditional market could be the discomfort associated with the use in crowded, congested and poorly ventilated places with no fresh air. Also, it could be due to the fact that verbal communication can be impaired with the facemask on the nose and mouth. As known, verbal communication is essential for transactions in the traditional markets. Even, there may need to communicate with facial expression to strike a good bargaining in some circumstances. Also, lip reading can facilitate exchange of information between buyers and sellers. Thus, any activity or material that would hinder verbal communication such as facemask usage in the traditional markets may in itself be hindered in usage by the people.

Compliance with hand washing, sanitization and body temperature check at the traditional markets was nearly zero. The reason for the poor compliance with these essentials of Covid-19 safety protocols could be the structural and landscaping features of the traditional markets that may not be favourable to the placement of hand washing and sanitization materials at strategic places. Also, who to bell the cat when it comes to funding the items is a different kettle of fish. As known, soaps, sanitizers and thermometers require recurrent funding that can only be sustained with good financial strength. Apart from these, the handy and portable items may even be stolen without monitoring. In addition, enforcement of compliance with the Covid-19 safety protocols may not be feasible due to the porosity of the entrance that permits all Dicks and Harry entry to the markets. All these put together, could transform the market into the hub of Covid-19 pandemic considering the facts that the traditional markets particularly, food markets are indispensable, overcrowded, run in long business hours, require close contact with face to face communication and patronized by all Dicks and Harry from different walks of life.

Conclusion

This study shows that overcrowding, long duration of business hours and failure to comply with safety protocols and especially physical distancing are the risk factors for spreading Covid-19 in the traditional markets and the community at large. While no stone should be left unturned in the fight against Covid-19, there is the need to pay special attention to the traditional markets so as to curtail Covid-19 infection now and another pandemic in the future.

Limitations

There are quite a number of limitations in this study. Firstly, the study depended on ordinal scale of measurement which may subject the data to biasedness. Secondly, the compliance with the Covid-19 safety protocols cannot be uniformly scored as it varies not only from market to market but also within market, in time and sections. These limitations notwithstanding, the study raises the awareness about the peculiarities of the traditional markets at spreading Covid-19 and a wakeup call for further studies on the traditional markets, in Ekiti State, South West, and Nigeria.

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