

Assessments of a COVID-19 vaccine acceptance rate in population of Benadir region, Somalia

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Abstract

A cross-sectional study using random sampling was conducted from October to December 2020 in Benadir region, Somalia, to determine the acceptance rate of a COVID-19 vaccine in population. In this study, a total of 500 participants share their knowledge, ideas, and their acceptancy towards COVID-19 vaccine. Majority of participants 63.2% (n=316) refused to take the COVID-19 vaccine, while 36.8% (n=184) of participants allowed to take. As well as 73.8% (n= 369) participants denied to immunize their children, only 26.2% (n=131) allowed to vaccinate their children. Most of responds were knowledgeable that COVID-19 vaccine is not available in Somalia at that moment, 97% (n=485). the majority of participants heard COVID-19 vaccine 59% (n=298), but they don't believe that COVID-19 vaccine is effective and safe 64.4% (n=322), and could save lives 59.4% (n=297) as well as could not stop transmission of the disease 70.6% (n=353). The Community needs to educate the important of vaccine and government should be taken as importance to increase the COVID-19 vaccine acceptance conduct in the country.

Key Words: COVID-19 vaccine, Assessment, Population, Benadir region, Somalia

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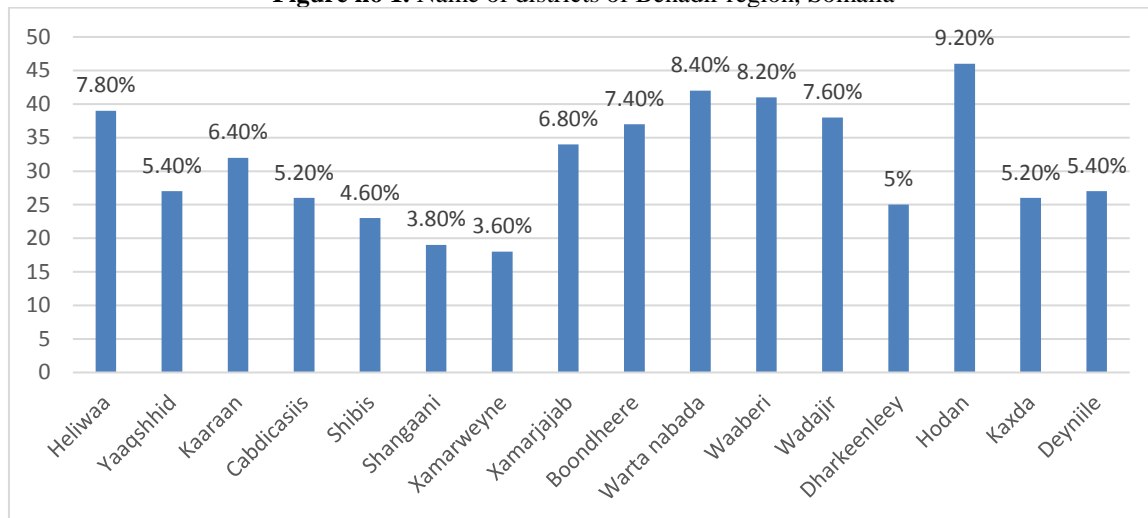
I. Introduction

In the late of December 2019, a cluster of unknown causes of pneumonia was diagnosed in Wuhan city of chine. on 7 January Coronavirus 2019 (COVID-19) was recognized as the causative virus by chines authorities¹. Coronavirus disease 2019 (COVID-19) pandemic is anticipated to stay to cause huge of morbidity and mortality in society and economic loses to the worldwide². During the COVID-19 pandemic, vaccination endures to be critically significant. Due to COVID-19 pandemic the number of children receiving routine immunization are decrease, which could lead to an increase in illness and death from preventable diseases³. Vaccines is the effective way to control and prevent a several diseases, save lives, and reducing current health emergency, as well as increasing the immunity of the population. In response, the efforts of the world scientists develop and test vaccines against COVID-19 have guided to an unprecedented the candidates staring clinical trials of COVID-19 vaccine during 2020. At present, 48 Ccovid-19 vaccines are under experimental assessment⁴. most of them have seen a good safety and immunization, while 11 of them are still being under assessment in phase 3 clinical efficacy⁵. Governments must be ready to ensure large-scale, equitable access and distribution of a COVID-19 vaccine if and when a safe and effective one becomes available. This will involve a necessary the system of health capacity in country, additionally as strategies to improve confidence in acceptance of the vaccine and those who distribute it⁶. In many countries including Somalia, hesitancy and misunderstanding of vaccine is very high⁷. In a lot of countries antivaccine activities are already started their campaigning of denying for VOCID-19 vaccine existence⁸. Though the efforts to control COVID-19, Governments and populations must measure recent levels of willingness to accept a possibly safe and effective COVID-19 vaccine and recognize associates of vaccine hesitancy and/or acceptance. In response to this problem. We present findings of acceptance rate of a COVID-19 vaccine in population of Benadir region, Somalia.

II. Methods

Study design and study area: A Cross-sectional study was conducted in 17 districts of Benadir region, Somalia, which lies among latitude 2.046934 and longitude 45.318161. The normal yearly temperature ranges between 28.7°C - 37°C. Benadir (Mogadishu) is the capital city of Somalia and has the largest population across Somalia and it is probable to have about 2.3 million people and covers an area of around 96,878 km^{9,10}. (Figure 1)

Figure no 1. Name of districts of Benadir region, Somalia



Sample type and Study Duration: Stratified random sampling has been conducted for a of 3 months from October to December 2020, to determine the acceptance rate of a COVID-19 vaccine in population of Benadir region, Somalia.

Sample size and calculation: The sample size of this study has been calculated by the following formula $n = Z^2 pq / d^2 = Z^2 P (1 - P) / d^2$

(Where, n=Sample size, Z=Standard deviate, P=Prevalence, Q=1-p, d=Error accepted)

The prevalence (P) was calculated as 10%. With reference to the above-mentioned formula and other studies done previously, we decided that the size of the study sample should be around 420 samples.

Data collection: A pretested and well-designed preformed questionnaire has been used to collect data for assessing to determine the acceptance rate of a COVID-19 vaccine in population of Benadir region, Somalia.

and misconception of the population towards Covid-19 vaccine in Mogadishu, Somalia.

Statistical analysis: All the data have been entered and analyzed using the SPSS software version 19. The analyzed data were presented in frequency and percentages

III. Result

The participants of this study were 500 participants from all districts of Benadir region, Somalia. Where the most of participants from Hodan district (n=46), followed by Warta nabada (n=41) and least appeared Xamarweyne (n=18) (Figure 1). The age of the participants varies from 15 to above 41 and most of participants were the age of 21 to 30 and most of them were Married. On the bases case of gender female responds was seen higher than the males. The maximum of the participants in this study in the study was studying in secondary schools. In case of occupations the greatest number of the responds are employed. (Table 1). knowledge and acceptance rate regarding COVID-19 vaccine variable are presented in Table 2. The results of our study show the majority of participants heard COVID-19 vaccine 59% (n=298), but they don't believe that COVID-19 vaccine is effective and safe 64.4% (n=322), and could save lives 59.4% (n=297). in terms of immunization the most of participants were unconfident to take the immunization, 63.2% (n=316), and also refused the immunization of children, 73.8% (n=369), as well as they believe that vaccine could not stop the transmission of the COVID-19,70.6% (n=353). The majority of responds were knowledgeable that COVID-19 vaccine is not available in Somalia at that moment, 97% (n=485). Regarding to the practice 70% allowed to wear face masks, and wash their hands regularly even if they get vaccinated.

Table no 1: Demographic characteristics of participants

Variables	Frequency	Percentage (%)
Gender		
Male	224	44.8
Female	276	55.2
Age		
15-20	70	14.0
21-30	215	43.0
31-40	153	30.6
41+	62	12.4
Education level		
Illiterate	177	35.4
Primary	68	13.6
Secondary	136	27.2
University	119	23.8
Marital status		
Single	222	44.4
Married	248	49.6
Divorcee	30	6.0
Occupational level		
Employed	205	41
Unemployed	202	40.4
Student	93	18.6

Table no 2: knowledge and acceptance rate regarding COVID-19 vaccine

Statement	Frequency (%)	
	Yes	No
Did you hear Covid19 vaccine?	298(59.6)	202(40.4)
Do you believe covid19 vaccine could save lives?	203 (40.6)	297 (59.4)
Would you take covid19 vaccine shots and recommend others?	184 (36.8)	316 (63.2)
Do you believe covid19 vaccine is effective and safe?	178 (35.6)	322 (64.4)
Should children need to get covid19 vaccine?	131 (26.2)	369 (73.8)
If you are vaccinated do you need to wear face mask and wash your hands regularly?	146 (29.2)	354 (70.8)
Do you believe covid19 vaccine is available in Somalia?	15 (3.0)	485 (97.0)
Could Covid19 vaccine will stop the transmission of coronavirus?	147 (29.4)	353 (70.6)
Could Covid19 vaccine only protect new infections?	131 (26.2)	369 (73.8)

IV. Discussion

Coronavirus disease 2019 (COVID-19) pandemic was first reported in Wuhan city, china on 31 December 2019 and its socio-economic and public health importance disease that cause a huge of economic losses, more than million death of people and affected a huge number of people in worldwide¹¹. A vaccine is a biological preparation that offers active acquired immunity and its measured one of the most important public health discoveries in the 21th century to a particular infectious disease¹². However, the acceptance of vaccine is different among the people behavior, social class, and time^{13,14}. Our study is the first study in Somalia concerned about COVID-19 vaccine acceptancy, used questionnaire and collect all responses data in all districts of Benadir Region of Somalia, about 500 participants, n=316 (63.2%) refused to take the COVID-19 vaccine, while n=184 (36.8%) of participants allowed to take. As well as n=369 (73.8%) participants denied to immunize their children, only n=131 (26.2%) allowed to vaccinate their children the COVID-19 vaccine if it is available. Although there are no enough studies to explore the purpose to take COVID-19 vaccine at this current crisis, our study is lower than the study conducted in Saudi Arabia, that reported 64.7% of participants allowed to uptake the COVID-19 vaccine¹⁵. Similarly, the study conducted in chine 72. % agreed to take COVID-19 vaccine¹⁶. While the study conducted in United States reported 80% of participants allowed by COVID-19 vaccine¹⁷. Low acceptancy rate of COVID-19 vaccine in our study is related to the panic of the population towards new vaccine, and also the participants did not understand and, don't have clear concept about new COVID-19 vaccine. As well as our study have a limitation, our study was a cross-sectional study, the sample size is very low and did not determine the population of Benadir region. The participants need to understand more about this new

COVID-19 vaccine, and better knowledge about COVID-19 vaccine, clear and consistent communication by government officials is crucial to building public confidence in vaccine programs.

V. Conclusion

This is the first study of COVID-19 vaccine in Somalia to determine acceptance rate of a COVID-19 vaccine in population of Benadir region, Somalia. The majority participants of our study have no confidence COVID-19 vaccine. The Community needs to educate the important of vaccine and government should be taken as importance to increase the COVID-19 vaccine acceptance conduct in the country.

Ethics Statement

The ethical review committee of Somali National University, Mogadishu, Somalia, approved our study protocol and procedures of informed consent before the formal survey.

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Author Contribution

AIM designed the study, SAM Prepared the questionnaire, KAJ and SAM collected and analyze the data, AIM prepared the original draft. SAM and AIM Finalize the manuscript and add critical comments. All authors read the manuscript and agree to be responsible for any aspect of the manuscript.

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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