

Attitudes and Intentions of Health Personnel towards Covid-19 Vaccination in Kaziba Health Zone

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Abstract

Introduction: SARS-CoV-2 is a virus of the coronaviridae family and of the beta coronavirus group, such as those responsible for SARS and MERS. This Covid-19 is more contagious than SARS and MERS but with a lower death rate. Covid-19 vaccine is a pharmaceutical tool to control the transmission of Covid-19 among the health personnel and the general population. The acceptance of Covid-19 vaccination remains reluctant among the health personnel. The purposes of this study are to determine the intentions and attitudes of health personnel vis-à-vis to Covid-19 vaccination and, to determine the reasons for accepting and refusing Covid-19 vaccination among health personnel in Kaziba Health Zone from 15 to 28 July 2021. Material and methods: our study was descriptive retrospective cross-sectional study. A random sampling method was carried out to collect the data through survey questionnaire with 102 health personnel. The data was analyzed with SPSS and Chi-square test was carried out. Results: the intentions and attitudes of the health personnel vis-à-vis to Covid-19 vaccination was (31.4%), and the participants who declared the mandatory Covid-19 vaccination was 31.4%. The health personnel who accepted the covid-19 vaccine were 21.6%, however, those who refused was 45.1%. Conclusion: health personnel do not have acceptable intentions and attitudes towards Covid-19 vaccination. Only nurses and midwives, physicians and healthcare assistance staff were agreeable to Covid-19 vaccination to control the pandemic. Lack of information was the main refusal reason for Covid-19 vaccination. The health personnel were not willingly too mandatory Covid-19 vaccination.

Keywords: Attitudes, Covid-19, Health personnel, Intentions, Kaziba, SARS-CoV-2, Vaccination.

Introduction

The first case of the new Covid-19 emerged in December 2019, in Wuhan, Hubei province, China [1]. This Covid-19 rapidly spreads worldwide, as of 11 March 2020 Covid-19 was declared pandemic of international concern [2]. To control the transmission of SARS-CoV-2, pharmaceutical intervention such as vaccine remains vital [3, 22]. Some countries embarked on vaccination campaigns to curb down the transmission of Covid-19 [4], a vaccination certificate was proposed and issued to all

recipients to allow the international and social domestic activities [5], therefore, as condition to embark on the international travels one supposed to possess Covid-19 vaccination certificate. However, the mandatory possession of Covid-19 vaccination certificate is still rejected by a good number of people since there is an inequality of vaccine supply between the developed and non-developed countries [6]. It is vital to gather local data on the people ideas and behavior, also the global impact towards the Covid-19 vaccination to allow the implementation of the best strategies to encourage Covid-19 vaccination acceptance.

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These best strategies will improve vaccination coverage rate and enable the best communication strategies during the vaccination campaign. The collection of data for the health personnel carry a significant relevance owing to the cardinal role the health personnel play in the process of vaccination activities [7]. Though, the African continent is relatively less affected by Covid-19 than other continents such as America and Europe, there are concerns about the precariousness of the Africa health system towards high transmission rate of SARS-CoV-2 [8]. As of 25 January 2020, Asian continent recorded a prevalence of 2,062 [9]. America and Europe were the continents that recorded large number of cases and deaths. As of 30 October 2020, Europe continent recorded 10,520,014 cases and 279,657 deaths [10]. On the other hand, as of 2 November 2020, in the American continent, the USA was the most affected country worldwide with 9,032,465 cases and 228,998 deaths [9]. Africa continent notified its first case in February 2020 in Egypt. As of 25 June 2020, Covid-19 spreads to all 54 countries of the African continent [11]. As of 11 July 2020, DRC recorded 7,905 cases and 189 deaths, ranking the country at 11th position out 54 countries in the African countries. There is still low extent of the implementation of public health measures and the provision of the health service delivery towards Covid-19 pandemic. In addition, it has been found a certain level of negligence in line with hygiene and aseptic measures to figure out among the most challenges during the assessment of the public health measures and the health service delivery. SARS-CoV-2 spreads through aerosols from one person to other(s) in close contact [11]. Another study indicated that Covid-19 infection from one patient hospitalized in South Korea spread to other 118 patients who previously were not infected [12]. To control Covid-19 pandemic at global extent, Covid-19 vaccine has been found to be ultimate pharmaceutical tool. Even though the research has made significant progress to the development of a certain number of vaccine

brands, these vaccines are still at experimental stage of clinical control trials with expectant results [10]. On the one hand, the development of the vaccines provide a solution to control Covid-19 pandemic. On the other hand, there is number of concerns regarding the deployment and acceptance of the vaccines against SARS-CoV-12 [12]. Therefore, the objectives of this study were to determine the attitudes and intentions of health personnel vis-à-vis to Covid-19 vaccination as well as the reasons for accepting and refusing Covid-19 vaccination among the health personnel in Kaziba health zone from 15 to 28 July 2021.

Materials and Methods

Study area: this study was conducted at the Kaziba Health Zone (General Reference Hospital and Health Centers) which is located in Walungu territory of South Kivu Province, DRC. Kaziba General Reference Hospital is the main public hospital located in Kaziba centre which is 54km away from Bukavu (provincial capital city of South Kivu) along the road Bukavu-Nyangezi-Kaziba. Kaziba Health Zone services an estimated total population of 142,852 in 2020.

Study design and period: an observational descriptive retrospective cross-sectional study was carried from July 15 to 28, 2021.

Study participants: the source population of this study was all health personnel aged between ≤ 30 and ≥ 51 years.

Sample size calculation and sampling procedures: the sample size was determined by using the following formula: $n = (e^2 * p * q) / d^2$. The expected minimum sample of $n + n / 10n$. Based on the total number of 200, after carrying out the exclusion criteria and considering the time (limiting factor), our definite sample size was 102.

Study variables: dependent variables were attitudes and intentions of health personnel vis-à-vis to Covid-19 vaccination, reasons for accepting and refusing Covid-19 vaccination among health personnel, and opinions of health

personnel on mandatory vaccination to the population. Independent variables were age, gender, health professional group and work department, educational attainment, involvement in the care of Covid-19' patients.

Data collection tools and procedures: data regarding the variables were collected through anonymous in-person survey questionnaire filled out by selected health personnel. Data were collected by field data collectors who were followed by supervisors. A one-day orientation was given to the field data collectors and supervisors concerning the purpose of the study, data collection tools and interaction with the participants. During this process of the data collection, the supervisors and the field data collectors were provided with facemasks and hand-sanitizer solutions, and they were guided to comply with public health measures in place. The survey questionnaire was made of binary option. The supervisors assessed the consistency and completeness of data daily.

Statistical analysis: Microsoft excel spreadsheets were initially used to capture data

then to import into SPSS (version 21). Descriptive statistics was carried out and presented with narration and tabulation. Chi-square test analysis was performed to identify statistically significant variables using a cut-off p -value < 0.05

Ethics approval and consent to participate ethical clearance was obtained from the institutional review board (IRB) of the University of Kaziba. A written informed consent obtained from each participant before data collection.

Results

Socio-professional characteristics of the study participants: in this current study, a total of 102 participants was involved. There were 58 (56.9%) male participants (56.9% vs 43.1%). The age group 31-40 was most represented (37.3%) as presented in Table 1.

Table 1 presents the age groups of the health personnel of Kaziba Health Zone with age group 31 – 40 being more representative.

Table 1. Health Personnel Age Groups

Age Groups (Years)	Frequency (n)	Percent (%)
≤ 30	34	33.3
31 – 40	38	37.3
41 – 50	13	12.7
≥ 51	17	16.7
Total	102	100.00

Nurses and midwives were the health professional much represented (66.7%) (See Table 2). As can be seen from Table 2, the health

personnel with certificate level reported significantly more than others.

Table 2. Educational Attainment of Health Personnel

Educational Attainment	Frequency (n)	Percent (%)
Certificate level in Technical Sciences	44	43.1
Diploma Level	33	32.4
Degree Level in any field than medicine	14	13.7
Degree in Medicine	10	9.8
Postgraduate specialization	1	1.0
Total	102	100.00

Regarding the educational attainment, a large proportion of health professional was certificate level (43.1%) (See Table 3). Table 3 displays the

breakdown of health personnel per professional categories with nurses and midwives representing more than 2/3 of personnel.

Table 3. Distribution of Health Personnel per Subgroup

Health personnel subgroup	Frequency (n)	Percent (%)
Nurses and Midwives	68	66.7
Physicians	10	9.8
Health personnel assistance staff	9	8.8
health personnel diagnostic staff	14	13.7
Health personnel emergency staff	1	1.0
Total	102	100.00

Looking at the work department, many participants (20.6%) were found in the department of internal medicine as portrayed in Table 4. Less than 10% of health professional were directly involved in care of Covid-19 patients (9.8% vs. 90.2%).

Table 4 presents different departments organized at hospital and health centre level in Kaziba health Zone with internal medicine having many personnel than other departments.

Table 4. Distribution of Health Personnel per Department

Department	Frequency (n)	Percent (%)
Internal Medicine	21	20.6
Pediatrics	15	14.7
Surgery	6	5.8
Obstetrics-Gynecology	15	14.7
Emergency	2	2.0
Imaging	1	1.0
Pharmacy	4	3.9
Others	38	37.3
Total	102	100.00

Accordingly, our results indicate that there was statistically significant association ($\chi^2(4) = 9.837$ at $p = .04$ level) between health personnel subgroup and intentions and attitudes vis-à-vis to

Covid-19 vaccination as shown in Table 5. Table 5 shows the Chi-Square test with significant $p = 0.04$ level.

Table 5. Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.837 ^a	4	0.043
Likelihood Ratio	14.052	4	0.007
Linear-by-Linear Association	1.783	1	0.182
N of Valid Cases	102		

a. 5 cells (50.0%) have expected count less than 5. The minimum expected count is .31.

Among the health personnel categories, there were respectively healthcare assistance (44.4%), physicians (40%) and, nurses and midwives (33.8%) (See Table 6). It can be seen from the

data in Table 6 that the healthcare assistance, physicians and nurses and midwives were the health personnel willingly to accept Covid-19 vaccination.

Table 6. Intentions and Attitudes of Health Personnel vis-a-vis to Covid-19 Vaccination

Health personnel subgroup		Intentions and attitudes vis-à-vis Covid-19 vaccination		Total
		Yes	No	
Nurses and Midwives	Count	23	45	68
	% Within health personnel subgroup	33.8%	66.2%	100.0%
Physicians	Count	4	6	10
	% Within health personnel subgroup	40.0%	60.0%	100.0%
Healthcare assistance staff	Count	4	5	9
	% Within health personnel subgroup	44.4%	55.6%	100.0%
Healthcare diagnostic staff	Count	0	14	14
	% Within health personnel subgroup	0.0%	100.0%	100.0%
Healthcare Emergency staff	Count	1	0	1
	% Within health personnel subgroup	100.0%	0.0%	100.0%
Total	Count	32	70	102
	% Within health personnel subgroup	31.4%	68.6%	100.0%

The reasons for accepting Covid-19 vaccination: the main reason for vaccination acceptance was the contribution to the control of Covid-19 pandemic (21.6%) (See Table 7).

Table 7 shows that the contribution to the control of the pandemic was the reason for accepting vaccination among health personnel.

Table 7. Reasons for Accepting Covid-19 Vaccination among Health Personnel

Reasons for Accepting	Frequency (n)	Percent (%)
To protect themselves	21	20.6
To protect their families	8	7.8
To protect their patients	5	4.9
To contribute to control of pandemic	22	21.6
More than two reasons	11	10.8
Others	35	34.3
Total	102	100.00

While the reasons for refusing Covid-19 vaccination were attributed to lack of

information as portrays in Table 8. Looking at Table 8, it is apparent that the reason not enough

information about the vaccine reported significantly than other reasons.

The opinions of the health personnel regarding mandatory Covid-19 vaccination to

population: the result of this study depicts that there was a high rate (37.2%) of health personnel being against to Covid-19 vaccination (31.4 vs. 68.6).

Table 8. Reasons for Refusing Covid-19 Vaccination among Health Personnel

Reasons for Refusing	Frequency (n)	Percent (%)
Concerns about vaccine efficacy	9	8.8
Concerns about vaccine safety	1	1.0
Perception that Covid-19 is not a dangerous disease	2	2.0
Not enough information about the vaccine	46	45.1
Perception of not being at risk for infection	9	8.8
More than two reasons	9	8.8
Others	26	25.5
Total	102	100.00

Discussion

In this current study, we have tried to determine the intentions and attitudes of health personnel vis-à-vis to Covid-19 vaccination, as well as the reasons for accepting and refusing Covid-19 vaccination among the health personnel in Kaziba health zone from 15 to 28 July 2021. Accordingly, our results indicated that there was statistically significant association ($\chi^2 (4) = 9.837$ at $p = .04$ level) between health personnel subgroup and, intentions and attitudes vis-à-vis to Covid-19 vaccination. Among the health personnel categories, there were respectively healthcare assistance (44.4%), physicians (40%) and nurses and midwives (33.8%). These results are in accord with recent studies indicating that there was high rate of accepting Covid-19 vaccination [14, 15].

The reasons for accepting Covid-19 vaccination, the contribution to control of Covid-19 pandemic was found to be the main reason among the health personnel (21.6%). The findings of this study are not consistent with one research which found 57.8% of vaccination acceptance rate among the health personnel [14]. A cross-sectional study found that the reasons for health personnel accepting Covid-19 vaccination was to protect themselves against Covid-19 [19]. The reasons for refusing Covid-

19 vaccination, the lack of information regarding the Covid-19 vaccine was discovered as the main reason (45.1%) among the health personnel. These results are in keeping with previous observational study, which found the same reason as for our study [16, 23]. However, another study revealed that there was eager desire of vaccine acceptance, in addition, this study suggested several strategies to address the vaccination hesitation among the health personnel and the general population to reach the heard immunity [17]. Other studies found that vaccine safety [20], efficacy [24] and negative attitudes and poor perceptions were the main reasons for refusing Covid-19 vaccination [25]. Regarding the mandatory Covid-19 vaccination to the health personnel and general population, less than $\frac{1}{3}$ (31.4%) of the study participants was willingly to comply with mandatory Covid-19 vaccination (31.4% vs. 68.6%). These results do not seem to be consistent with other research which found a moderate acceptance level of health professional towards mandatory Covid-19 vaccination [14]. The findings of this study reveal that the participation rate of male gender was 13.8% higher than of the female gender (56.9% vs 43.1%) among the health personnel. These findings mirror that of a previous study that found a same trend where the male gender represented 40.4% (18), yet they are not

consistent with a study that found a high female participation rate [21]. A possible explanation for these findings may be that Bashi women are more interested in farming than in studies. Most participants were between 31 and 40 years (37.3%). These results disagree with the findings of other research which found that the age group of 41-50 years was prevalent (31%) [14]. A possible explanation for this might be associated to a small number of the health personnel in Kaziba health zone. The findings indicate that the health personnel that had certificate level were more responsive (43.1%) to this study than other health personnel groups. A possible explanation to this high percentage of health personnel that hold certificate level is due to the lack of universities in Kaziba territory. In the past, there was only a health college in the territory. The results of the study indicate that the department of internal medicine has higher number (20.6%) of health personnel than others reflecting only the data from the hospital. These results support previous research [14] into this area which found similar result in the department of internal medicine (38%). In addition, we found that the health professional who worked in the health centers did not how to classify themselves according to the departments (refer to another department). It is somewhat surprising that only 9.8% of health personnel are involved in the care of patients with Covid-19. However, this study proves that the poor involvement of health personnel in the care of patients with Covid-19 is because Kaziba health zone does not have the necessary commodities

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to enable the diagnosis and management of Covid-19 cases.

Conclusion

Our study on intentions and attitudes of health personnel vis-à-vis to Covid-19 vaccination in Kaziba health zone found that male participants aged between 31 and 40 years were more represented. Healthcare assistance, physicians and nurses and midwives were the health professional who accepted the Covid-19 vaccine. The reason for accepting Covid-19 vaccination was the contribution to the control of Covid-19 pandemic whereas the reason for refusing Covid-19 vaccination was the lack of information concerning Covid-19 vaccine. There is, therefore, a definite need for the Ministry of Public Health to mobilize more commodities for screening, diagnosis, and care of Covid-19 cases. Moreover, more information about Covid-19 vaccine should made available to enhance the vaccine uptake among the health personnel and the general population. Greater efforts are needed to ensure a substantial involvement to care of the health personnel.

Conflict of Interest

The authors declare no conflict of interest.

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