



Healthcare workers perception on covid-19 vaccine and vaccination in the Bamenda Health District

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Abstract

Background: Evidence has demonstrated that vaccine hesitancy is rising, resulting in alarming figures on disease outbreaks reported globally. **Objective:** The objective of this study was to determine the approaches for increasing acceptability and voluntary uptake of Covid-19 vaccine in the Bamenda Health District, North-West Region of Cameroon. **Method:** A multistage cross-sectional, descriptive study design was used where data was collected at a point in time. Data was collected from the 12 health areas of the Bamenda Health District of the North-West Region. One hundred and five (105) health care providers in the 12 health areas of the Bamenda Health District were included in the study. The main instrument was an interview guide, to gather information such as perception on covid-19, vaccines, and vaccination. Data was analysed using SPSS and results presented on tables and charts. **Result:** Majority of the health workers commended that all the vaccines are good (46.7%) and most of them express their feelings about the Covid-19 vaccination as a good idea to prevent Covid-19 disease (81.9%). Some vaccines are easily available (62%) and majority of these vaccines are free (87.5%). **Conclusion:** The clear and transparent communication of COVID-19 vaccines' risks and benefits is an approach to increasing vaccine uptake among the public, a means of maintaining public trust in science.

Keywords: covid-19, vaccines, vaccination, perspectives, uptake, challenges

Introduction

Globally, studies have shown that COVID-19 vaccines are safe, effective and key predictors of COVID-19 vaccination intentions [1]. A recent systematic review [2] reports that perceptions of vaccine safety and effectiveness are 'universally' consistent determinants of COVID-19 vaccine hesitancy. In addition, surveys which specifically asked COVID-19 vaccine hesitant participants their reason for vaccine refusal or delay consistently report that concerns over safety and efficacy are among the most common reasons given [3]. Similarly, qualitative research has also highlighted these concerns as reported drivers of COVID-19 vaccine hesitancy among minority and at-risk groups. Such concerns may be fuelled by COVID-19 vaccine

misinformation and recent research has identified susceptibility to misinformation as a correlate of COVID-19 vaccine hesitancy.

Individual experiences related to COVID-19 may affect COVID-19 vaccination. As mortality and severity of harm due to COVID-19 were higher among those with chronic diseases [4], those with chronic diseases may be motivated to take up COVID-19 vaccination. Such an association was indeed reported in previous studies on COVID-19 vaccination intention [5], although mixed findings have also been reported. In parallel, people with chronic diseases might worry that their chronic disease status would elevate their vulnerability to severe side effects of COVID-19 vaccination, as many severe adverse events involved older people and those with chronic diseases. It is warranted to understand the potential role of chronic disease status on COVID-19 vaccination in the general population. On a related note, those who subjectively believed that their health condition was not fit for COVID-19 vaccination were more likely to develop vaccine hesitancy. It is contended that self-rated physical fitness for vaccination would be positively associated with COVID-19 vaccination.

Compulsory massive COVID-19 testing for travellers and those having potential close contacts with infected cases (including those who live or work in proximity) have been widely implemented in Hong Kong [6]. Such an experience might change perceptions (e.g., perceived risk) related to COVID-19 vaccination and is a potential factor of COVID-19 vaccination. The need to travel is another potential individual-level factor considered in this study. International traveling has largely been suspended due to the COVID-19 pandemic and many people are eager to travel. There are recent discussions about 'vaccine passports' to facilitate vaccinated international travellers [7] which have been implemented in some countries.

Furthermore, the socio-ecological model postulates that individual-level (e.g., perceptions and personal experiences) and structural (e.g., cultural and political) factors are both key determinants of health behaviours [8]. The structural factors of trust towards the government in general and specific to the governmental vaccination programs are part of social capital [9]. In literature, social capital was associated with health-related preventive behaviours, including influenza vaccination [10]. Consistently, trust towards the government was significantly associated with COVID-19 vaccination intention in multiple regions (e.g., Hong Kong and some European countries). It is particularly important in regions where trust towards the government is lacking or declining; Hong Kong is such a place because of the social movement and political conflicts occurring in the past few years [11]. However, associations between trust towards the government and COVID-19 vaccination behaviour have not been tested. This study found moderate prevalence of PSCV of 21% in the Hong Kong general adult population about three months since initiation of the vaccination program in Hong Kong, which was quite comparable to the 19.1% reported by the Hong Kong government as of 27 May 2021 (i.e., the last day of the survey). To attain herd immunity, the vaccination rate certainly needs to be improved. All the studied independent variables were significantly associated with PSCV. The association between sex and PSCV was fully mediated by concerns about side effects of COVID-19 vaccination and self-perceived physical fitness for COVID-19 vaccination.

Previous studies of vaccination intention conducted in Hong Kong [5] and overseas [12], females showed significantly lower prevalence of PSCV than males. In literature, females usually tended to have higher prevalence of health-related service utilization (e.g., mental health services) [13, 14].

Materials and methods

Study Design

The research was conducted within the quantitative research paradigm based on a cross sectional design. This design is less costly, easy, and simple to implement, though it cannot be generalized to the entire population. Cross-sectional study design was used where data was collected at a point in time. Data was collected from the multistage sampling of the 12 health areas of the Bamenda Health District of the North-West Region.

Study site

The study was conducted among selected health areas within the Bamenda Health District (BHD). This was both community and health-facility-based observational cross-sectional study in the Bamenda Health District (BHD), North-West Region (NWR), Cameroon. The BHD is an urban and semi-urban area with one main hospital, the Regional Hospital Bamenda (RHB) that functions as the referral hospital, and many public, lay private and mission health facilities. With its roughly 337,036 inhabitants, it has 12 health areas and covers a total surface area of 560 square kilometres.

Study Population

The population of healthcare providers were Nurses/Midwives/Medical Doctors in the sampled health areas in the Bamenda Health District. .

All healthcare providers were included in the study.

Sample size calculation

Study sample consisted of 105 health care providers that were drawn from the various sampled health areas. All available healthcare workers were sampled.

Sampling technique

Health care providers: The study population was distributed into all the 12 health areas of the Bamenda Health District and for each health area, all health units were selected, within which the health care providers were sampled by convenient sampling, until the required sample size was achieved.

Data collection tool and collection procedure

An interview guide (questionnaire) was divided into four sections; Socio-demographic, Vaccines preference, Attitudes towards covid-19 vaccination, Practice on covid-19 vaccination and Belief. In each of the selected health units, all health workers were interviewed with the use of a questionnaire for those who consented to participate in the study, by convenient sampling, method. To each health worker, a questionnaire was issued, which was filled by the health worker and returned to the data collector.

Validation of instrument

To be sure of the quality of data collected, the instrument (Interview guide/questionnaire) was pretested on 30 participants in the Nkwen health district.

Data management and analysis

Prior to data entry, a data coding guide was prepared with each variable assigned a specific code. Data entry was done using unique identifiers and cross-checked for entry errors and range checks. Data analysis was done using the Statistical Package for Social Science (SPSS) for Windows version 25.0. Descriptive statistics was obtained for different variables. Frequency distribution tables, as well as charts were used to present results. Chi-square (χ^2) analyses were also conducted to test all research hypotheses to determine any existing relationship with the demographic and other variables. Statistical significance was set at $P=0.05$ or 5% confidence level.

Ethical considerations

Ethical clearance was sought from the University of Bamenda, Faculty of Health Sciences Institutional Review Board. Administrative clearance was obtained from the Regional Delegate of Public Health for the North-West Region. Authorization (hospital clearance) for data collection was obtained from the study sites. Absolute confidentiality was guaranteed by not including the subject's names on the data collection tool. Instead, codes were used. All information obtained was kept confidential and anonymous.

RESULTS

Demographic information

For healthcare providers, 105 standard interview guides were used to collect information from participants. The result of the analysis shows that most of the respondents were aged 21-30 years old 54(51.4%), followed by those aged 31-40 years old 34(32.4%). Gender wise, majority of the participants were females 68(64.8%), while males were just 26(24.8%). In terms of professional specialty, majority of the respondents were nurses 70(66.7%), followed by midwives 27(25.7%). Majority of the respondents had 3 years of training 46(43.8%), followed by those with 2 years of training 17(16.2%). For work experience, majority of the healthcare providers had less than 1 year of work experience 29(27.6%) followed by those with 2-3 years of work experience 20(19%). Religious classification shows that majority of the healthcare providers were 86(81.9%) (Table I).

Table I: Distribution of respondents by demographic information

Variable	Frequency	Percent
Age		
21-30	54	51.4
31-40	34	32.4
41-50	11	10.5
51-60	4	3.8
Gender		
Female	68	64.8
Male	26	24.8
Profession		
MD	3	2.9
Nurse	70	66.7
Midwife	27	25.7
Years of training		
<1-1years	15	14.3
2years	17	16.2
3 years	46	43.8
5+	19	18.1
Years of work experience		
<1-1year	29	27.6
2-3 years	20	19.0
4-6 years	13	12.4
7-10 years	13	12.4
10years+	13	12.4
Religion		
Christianity	86	81.9
Muslim	8	7.6
None	4	3.8

Vaccines preference

According to the various responses concerning Covid-19 vaccines, it shows that they know much about the various vaccines except the Moderna vaccine. Johnson and Johnson vaccine was selected as the best Covid-19 vaccine 44(41.9%), followed by Oxford/AstraZeneca vaccine 27(25.7%) and Pfizer/BioNTech vaccine

24(22.9%), while Moderna vaccine was the least with just 8.6%. Various reasons were given for their preference. Majority of the respondents commended that all the vaccines are good 49(46.7%), meanwhile, others indicated that some were more effective than others 28(26.7%) and some because it was recommended for a wide range of persons 26(24.8%).

Majority of the respondents indicated that they would encourage people to take the vaccine when they feel that it is safe 27(25.7%) and some say, when they too had taken it 17(16.2%). The choice for when to encourage others to take the vaccine was influenced by safety concerns, 'I need to be very sure it is safe' as reported by many participants 50(47.6%).

Majority of them express their feelings about the Covid-19 vaccination that is a good idea to prevent Covid-19 disease 86(81.9%). Some of them had at one point discouraged others from taking the vaccine 21(20%) for safety reasons (Table II).

Table II: Distribution of respondents by perception and vaccines preference

Variable	Frequency	Percent
Best covid-19 vaccine		
Moderna vaccine	9	8.6
Oxford/AstraZeneca vaccine	27	25.7
Pfizer/BioNTech vaccine	24	22.9
Johnson and Johnson	44	41.9
Reason for the preference		
It is effective than others	28	26.7
It is recommended for many people	26	24.8
All are good	49	46.7
When to encourage people to take the vaccines		
very good	51	48.6
When I feel that it is safe	27	25.7
When I must have taken mine	17	16.2
I don't know	8	7.6
Reason for the choice of timing		
Am not sure yet	16	15.2
I can't tell	26	24.8
I need to be very sure it is safe	50	47.6
Feelings about the covid-19 vaccination		
Vaccination is a good idea to prevent diseases	86	81.9
Vaccination is a bad idea	9	8.6
It has bad site effect	4	3.8
B and C	6	5.7
Have at any point discourage someone on the vaccines		
I have discouraged someone	21	20.0
Not at all	74	70.5
If Yes, the Vaccine		
Moderna vaccine	4	3.8
Oxford/AstraZeneca vaccine	3	2.9
Pfizer/BioNTech vaccine	3	2.9
All	18	17.1

Reasons		
It is a weapon to kill Africans by the white	4	3.8
I don't like the vaccine	6	5.7
It has deadly site effect	5	4.8
None of the above	37	35.2

Opinion of healthcare personnel on vaccines

The result showed that all the participants had good knowledge on vaccines and vaccination. There is difference in knowledge between the male and female participants, but the difference was not statistically significant ($X^2=0.020$, $P=0.535$). There was no much difference between different age groups from age 20-40 years. The difference was not statistically significant. Professionally, the nurses, MDs and midwives had good knowledge on vaccines and vaccination. The nurses had better knowledge (70.7%) than MDs and midwives, but the difference was not statistically significant ($X^2=0.147$, $P=0.929$). According to years of training, those with 3 years of training had better knowledge than those of the other groups, though the difference was not statistically significant ($X^2=0.293$, $P=0.961$). Those with more years of work experience had better knowledge than those with few years of work experience (84.6%), but the differences was not statistically significant ($X^2=4.484$, $P=0.344$).

Table III: Distribution of the difference association between knowledge and demography

Variable	Knowledge on vaccines and vaccination		X ²	p Value
	Good Knowledge	Poor Knowledge		
Gender				
Male	56(71.8%)	22 (28.2%)	0.020	0.535
Female	19 (70.4%)	8 (29.6%)		
Age Group				
20-30	40 (71.4%)	16 (28.6%)	1.651	0.648
31-40	26 (76.5%)	8 (23.5%)		
41-50	7 (63.6%)	4 (36.4%)		
51-60	2 (50%)	2 (50%)		
Profession				
MD	2 (66.7%)	1 (33.3%)	0.147	0.929
Nurse	53 (70.7%)	22 (29.3%)		
Midwife	20 (74.1%)	7 (25.9%)		
Years of Training				
<1-1years	11(68.8%)	5 (31.2%)	0.293	0.961
2years	18 (75%)	6 (25%)		
3 years	33 (71.7%)	13 (28.3%)		
5+	13 (68.4%)	6 (31.6%)		
Years of Experience				
<1-1year	23 (74.2%)	8 (25.8%)	4.484	0.344
2-3 years	22 (64.7%)	12 (35.3%)		
4-6 years	8 (57.1%)	6 (42.9%)		
7-10 years	11 (84.6%)	2 (15.4%)		
10years+	11 (84.6%)	2 (15.4%)		

Association of Vaccine preference and demographic information

According to the results on Covid-19 vaccine preference, majority of both the females and the males preferred the Johnson and Johnson vaccine than the other vaccine types, but the difference in terms of preference was not statistically significant ($P=0.576$). All age groups preferred the Johnson and Johnson vaccine to others, while for profession, majority of the nurses preferred the Johnson and Johnson compared to the vaccine types and the difference between the vaccines and between profession was statistically significant ($P=0.027$). Generally, all healthcare personnel preferred the Johnson and Johnson vaccine (Table IV).

Table IVI: Distribution of the association of participant's vaccines preference

Variable	Knowledge on vaccines and vaccination				X ²	p Value
	Moderna vaccine	Oxford/AstraZeneca vaccine	Pfizer/BioNTech vaccine	Johnson and Johnson		
Gender						
Male	7 (9%)	22 (28.2%)	15 (19.2%)	33(42.3%)	2.892	0.576
Female	2 (7.4%)	5 (18.5%)	9 (33.3%)	11(40.7%)		
Age group						
20-30	3 (5.4%)	15(26.8%)	11(19.6%)	27(48.2%)	13.357	0.344
31-40	2(5.9%)	10(29.4%)	9 (26.5%)	12(35.3%)		
41-50	3(27.3%)	2(18.2%)	2(18.2%)	4(36.4%)		
51-60	1(25%)	0(0.0%)	2(50%)	1(25%)		
Profession						
MD	1(33.3%)	0(0.0%)	2 (66.7%)	0 (0.0%)	17.315	0.027
Nurse	3(4%)	17(22.7%)	20(26.7%)	34(45.3%)		
Midwife	5(18.5%)	10(37%)	2(7.4%)	10(37%)		
Years of training						
<1-1year	0(0.0%)	4(25%)	2 (12.5%)	10(62.5%)	12.815	0.383
2 years	3(12.5%)	3(12.5%)	6(25%)	11(45.8%)		
3 years	4(8.7%)	12(26.1%)	12(26.1%)	18(39.1%)		
5+ years	2(10.5%)	8(42.1%)	4(21.1%)	5(26.3%)		
Years of work experience						
<1-1year	2(6.5%)	9(29%)	8(25.8%)	12(38.7%)	18.846	0.277
2-3 years	4(11.8%)	9(26.5%)	4(11.8%)	16(47.1%)		
4-6 years	1(7.1%)	1(7.1%)	7(50%)	5(35.7%)		
7-10 years	2(15.4%)	4(30.8%)	0(0.0%)	7(53.8%)		
10years+	0(0.0%)	4(30.8%)	5(38.5%)	4(30.8%)		

Attitudes on covid-19 and vaccination

Apart from the Covid-19 vaccine, majority of the health care providers see vaccination as a very good measure to prevent diseases 99(94.3%) for everyone depending on the vaccines 81(77.1%), reason being that diseases affect different group of persons 79(75.2%). Majority of them accepted to encourage others to take the covid-19 vaccine 85(81%) as soon as possible 92(87.6%) reason being that Covid-19 is a pandemic 61(58.1%) and it is deadly 28(26.7%) (Table V).

Table V: Distribution of respondents' attitude on covid-19 and vaccination

Variable	Frequency	Percent
Feelings on general vaccination apart from the covid-19 vaccination		
It is good to prevent diseases	99	94.3
It is a weapon to kill Africans by the white	4	3.8
None of the above	2	1.9
Age group to be vaccinated always		
Children only	8	7.6
Older persons	11	10.5
Everyone depending on the vaccines	81	77.1
None of the above	3	2.9
Reason		
Only children are at high risk	6	5.7
Older persons can resist side effect of the vaccines	11	10.5
Diseases affect different group of persons	79	75.2
Don't Know	2	1.9
Encouragement others to take the covid-19 vaccine		
I will encourage others	85	81.0
I will not encourage others	12	11.4
If yes, when to encourage them		
Soon	92	87.6
Next month	3	2.9
Not at all	2	1.9
If Yes, Reason		
it is pandemic	61	58.1
it is an epidemic	7	6.7
Covid-19 is deadly	28	26.7
I am too busy for now	2	1.9

Attitude of healthcare personnel and demography on Covid-19 vaccination

Both the females and the males had good attitude towards covid-19 vaccination. There was not much difference between the males and females ($P=0.160$). All age groups had good attitude towards covid-19 vaccination, though the different age groups had different attitudes, but the difference was not statistically significant ($P=0.772$). The different cadre of professionals had good attitude towards vaccination. Those with more years of training as well as those with more years of work experience had better attitude towards covid-19 vaccination. The differences was not statistically significant ($P>0.107$) (Table VI).

Table VI: Distribution of the association of participant's attitude and demography

Variable	Attitude on vaccination		X ²	p-value
	Good Attitude	Poor Attitude		
Gender				
Male	72(92.3%)	6(7.7%)	2.203	0.160
Female	27(100%)	0(0.0%)		
Age Group				
20-30	52(92.9%)	4(7.1%)		
31-40	32(94.1%)	2(5.9%)		

41-50	11(100%)	0(0.0%)		
51-60	4(100%)	0(0.0%)	1.123	0.772
Profession				
MD	2(66.7%)	1(33.3%)		
Nurse	71(94.7%)	4(5.3%)	4.470	0.107
Midwife	26(96.3%)	1(3.7%)		
Years of Training				
<1-1years	16(100%)	0(0.0%)		
2years	21(87.5%)	3(12.5%)		
3 years	43(93.5%)	3(6.5%)	4.228	0.238
5+	19(100%)	0(0.0%)		
Years of Experience				
<1-1year	30(96.8%)	1(3.2%)		
2-3 years	32(94.1%)	2(5.9%)		
4-6 years	13(92.9%)	1(7.1%)	0.600	0.963
7-10 years	12(92.3%)	1(7.7%)		
10years+	12(92.3%)	1(7.7%)		

Practice of covid-19 vaccination

Majority of the participants planned to encourage anyone to take Covid-19 vaccines 81(77.1%). Only 16(15.2%) of them feel to discourage others from taking the vaccine in fear of the following; future side effect 14(13%), lots of controversies and its connection to 5G network to control people 10(9.5%). Participants indicated educating people about the disease and the vaccine as the best practice of covid-19 vaccination 60(57.1%). Undesirable practices were identified such as forcing people to take vaccines and not educating people on the importance of the vaccine 60(57.1%). According to the participants, the undesirable practices could be overcome by educating people about the disease, the vaccine and making vaccination voluntary for everyone 62(59%). Now is the best time to educate the people on the disease and its vaccines, especially amidst the controversies going on 96(91.4%) and everyone 83(79%) need to be educated (Table VII).

Table VII: Distribution of respondents according to their practice of Covid-19 Vaccination

Variable	Frequency	Percent
Who to encourage to take the covid-19 vaccine		
Anybody	81	77.1
Health workers	7	6.7
Youths	3	2.9
Elderly	10	9.5
None	4	3.8
Who to discourage from taking the vaccine		
Anybody	16	15.2
Health workers	1	1.0
Youths	10	9.5
Elderly	7	6.7
None	70	66.7
Reason		
Future side effect	14	13.3
Has lots of controversies	8	7.6
Is connected to 5G to control people	2	1.9

All the above	10	9.5
None of the above	43	41.0
Best practice of covid-19 vaccination		
Educating people about the diseases	29	27.6
Educating people about the vaccines	13	12.4
All the above	60	57.1
Undesirable practices		
Forcing people to take vaccines	20	19.0
Not educating people on the importance of the vaccines	16	15.2
A and B	54	51.4
None of the above	10	9.5
How to overcome undesirable practice		
Educating people about the diseases	26	24.8
Educating people about the vaccines	8	7.6
make vaccination voluntary	5	4.8
All the above	62	59.0
When to encourage vaccine uptake through education		
Now	96	91.4
Next month	1	1.0
No Need	3	2.9
Reason		
The best time is now	81	77.1
Later is late	11	10.5
The disease is almost over	4	3.8
To whom should the education for uptake be given		
Health workers	10	9.5
Elderly	4	3.8
Everyone	83	79.0
None of the above	3	2.9

Generally, there was good practice on covid-19 vaccination. Like other variables, practice of Covid-19 vaccination was greater for females than for males. The difference was not statistically significant ($P>0.05$). Therefore, statistically, gender has no role or has no influence in Covid-19 vaccination practice. In terms of age, there was no statistical influence on the practice of Covid-19 vaccination. There was a general decrease in terms of practice with increase age groups. The difference between the age groups was not statistically significant ($P>0.05$).

In terms of training, there was no clear trend. The difference was not statistically significant ($P>0.05$). Therefore, years of training does not influence the practice of Covid-19 vaccination in this study (Table VIII).

Table VIII: Distribution of association of practice of Covid-19 vaccination and demography

Variable	Practice on Covid-19 Vaccination		p Value
	Good Practice	Poor Practice	
Gender			
Male	25(30.1%)	16(29.6%)	0.613
Female	51(61.4%)	33(61.1%)	

Age Group

20-30	40(48.2%)	27(40%)	
31-40	31(37.3%)	20(32.3%)	0.732
41-50	9(10.8%)	7(13%)	
51-60	3(5.6%)	1(1.6%)	

Years of Training

1 year	13(15.7%)	7(13.0%)	
2 years	12(20.0%)	10(16.1%)	0.176
3-4 years	37(44.6%)	28(43.2%)	
5+ years	17(20.5%)	9(14.5%)	

Belief on vaccination

Most of the participants 57(54.3%) accepted that there are beliefs that reject vaccination such as religion 28(26.7%), culture 16(15.2%) and myths or misconception 27(25.7%). According to the result, vaccination rejection often occurs because of poor education on the importance of vaccines 55(52.4%) and vaccine side effects 22(21%). Two major ways were identified in which vaccine rejection could be manifested such as refusal to take the vaccine and discouraging others from taking the vaccine 59(56.2%). According to the opinion of the participants, vaccine rejection is shown to vaccine providers, producers, and vaccination team 67(63.8%). According to the result, the health system 38(36.2%) and distributors 31(29.5%) are often blamed for vaccine rejection. Johnson & Johnson is the vaccine that was identified for easy acceptance 45(42.9%) for the reason of its effectiveness 55(52.4%). Moderna vaccine 33(31.4%) was identified to be easily rejected because it is not well known 48(45.7%) (Table IX).

Table IX: Distribution of respondent by their belief system on vaccination

Variable	Frequency	Percent
Presence of belief that reject vaccination		
Yes	57	54.3
No	29	27.6
If Yes, such belief		
Religion	28	26.7
Culture	16	15.2
Myth	27	25.7
None	11	10.5
When rejection often occur		
Vaccine failure	8	7.6
Side effects	22	21.0
Poor education on the important vaccines	55	52.4
Don't Know	10	9.5
How rejection manifest		
Refusal to take the vaccines	21	20.0
Discouraging others from taking the vaccine	9	8.6
A and B	59	56.2
None	7	6.7
Whom rejection is shown to		
Vaccine providers	6	5.7
Vaccine producers	2	1.9

Vaccination team	26	24.8
All the above	67	63.8
Who is often blamed		
The producer	20	19.0
Health system	38	36.2
Distributors	31	29.5
Population	9	8.6
What could cause any group of people to take covid-19 vaccine		
High death rate	18	17.1
Good education	19	18.1
Voluntary vaccination	5	4.8
None of the above	57	54.3
Vaccines that could be accepted easily		
Moderna vaccine	10	9.5
Oxford/AstraZeneca vaccine	20	19.0
Pfizer/BioNTech vaccine	20	19.0
Johnson and Johnson	45	42.9
Reason		
Its effectiveness	55	52.4
Its producer	6	5.7
No side effects	7	6.7
Don't Know	23	21.9
Vaccines could be rejected easily in Covid-19		
Moderna vaccine	33	31.4
Oxford/AstraZeneca vaccine	28	26.7
Johnson and Johnson	7	6.7
Pfizer/BioNTech vaccine	13	12.4
Reason		
Not well known	48	45.7
High side effect	14	13.3
Not very effective	10	9.5
All the above	14	13.3
General perception of the covid-19 vaccination		
It's it political	20	19.0
It is a game by the white and our government	9	8.6
It is not good for us because it is meant to control our minds	3	2.9
All the above	26	24.8
None of the above	45	42.9

Discussion

Johnson and Johnson vaccines was selected as the best Covid-19 vaccine (41.9%), followed by Oxford/AstraZeneca vaccine (25.7%) and Pfizer/BioNTech vaccine (22.9%), while Moderna vaccine was the least with just 8.6%. Various reasons were given for their preference. Majority of the respondents commended that all the vaccines are good (46.7%), meanwhile, others indicated that some were more effective than others (26.7%). This gives some indirect evidence that increasing perceptions of vaccine efficacy may have a limited subsequent impact on intentions. The government and responsible public health bodies have an ethical duty to

inform the public of the risks and benefits of the vaccines they are asking the public to take [15]. Thus, informing the public should be considered an important endpoint.

Majority of participants express their feelings about the Covid-19 vaccination that it is a good idea to prevent Covid-19 disease (81.9%). Some of them had at one point discouraged others from taking the vaccine (20%) for safety reasons. Apart from the Covid-19 vaccine, majority of the health care providers see vaccination as a very good measure to prevent diseases (94.3%) for everyone depending on the vaccines (77.1%), reason being that diseases affect different group of persons (75.2%). This result align with other research, which examined how messages influenced participants' perceptions of COVID-19 vaccine efficacy and safety, beliefs which are consistently associated with vaccine intentions [2, 16]. Majority of them accepted to encourage others to take the covid-19 vaccine (81%) as soon as possible (87.6%) reason being that Covid-19 is a pandemic (58.1%) and it is deadly (26.7%).

Age groups are potentially heterogeneous regarding COVID-19 vaccination intention. Results show that vaccine preferences decrease with age, with the age group, 21-30 having the highest vaccine preference, followed by those aged 31-40 years old. A previous local study conducted in September 2020 gave a contradictory result with prevalence of COVID-19 vaccination intention of only 7.9% and 12.7% in the 18–35 age group given vaccines having common mild side effects and 50% and 80% efficacy, respectively, which was significantly lower than that of other older age groups. A plausibility to explain the low vaccination intention among younger adults in other studies like in Hong Kong is that they tended to show a low level of trust towards the government for political reasons [5].

Participants indicated that educating people about the disease and the vaccine as the best practice of covid-19 vaccination (57.1%). Undesirable practices were identified such as forcing people to take vaccines and not educating people on the importance of the vaccines (57.1%). On the other hand, compulsory massive COVID-19 testing for travellers and those having potential close contacts with infected cases (including those who live or work in proximity) have been widely implemented in Hong Kong [6].

The relationship between vaccine preference and gender shows that the female had higher vaccines preference than males. The differences were in terms of most preferred vaccines ($P=0.080$), reasons for preferences ($P=0.469$), feelings about Covid-19 vaccination ($P=0.211$) and the attitude of discouraging others from taking the vaccines ($P=0.129$). However, previous studies of vaccination intention conducted in Hong Kong [4] and overseas [12], females showed significantly lower prevalence of PSCV than males. In literature, females usually tend to have higher prevalence of health-related service utilization (e.g., mental health services) [13, 14]. However, they showed stronger vaccine hesitancy (including influenza vaccination and COVID-19 vaccination) than males, although mixed findings have been reported. In addition, previous studies showed that females tend to have stronger worries about side effects of COVID-19 vaccination than males [17]. Some reports indeed showed more frequent side effects (including very rare but severe reactions) among females than males in Norway and the U.S., possibly due to sex differences in biological reactions.

According to the result, vaccination rejection often occurs because of poor education on the importance of vaccines (52.4%) and vaccines side effects (21%). Previous research on rejection towards other vaccines and

preliminary studies on COVID-19 vaccine intentions suggest that this framing may be effective in increasing vaccine acceptance. As more evidence of the effect of vaccination on transmission becomes available, researchers should investigate how communicating such evidence impacts vaccine attitudes and intentions [18, 19]. Two major ways were identified in which vaccine rejection could be manifested such as refusal to take the vaccine and discouraging others from taking the vaccine (56.2%).

Conclusion

Encouraging others to take vaccine can increase acceptability but it would depend on the trust accorded to the health workers for information. This would also depend on the efficacy concern by the vaccine and its effectiveness. Low vaccination intention among younger adults is that they tend to show a low level of trust towards the government for political reasons. Therefore, the government must ensure public trust on its information, activities and services.

Conflicts of interest

There was no conflict of interest

Reference

Reference

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