

Original Research Article

Knowledge, attitudes and practices towards COVID-19 prevention measures among private clinic patients in Windhoek, Namibia

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ABSTRACT

In December 2019, the SARS-CoV-2 virus emerged in Wuhan, Hubei Province, China, and later spread rapidly to other parts of China and eventually across all countries around the world, including Namibia. Despite causing severe to fatal acute respiratory syndrome, there are no known cures for the SARS-CoV-2 virus, only preventive measures such as social distancing, hands sanitizing, hands washing, wearing masks, and full-dosed COVID-19 vaccination. For this reason, this study was aimed at assessing the Knowledge, Attitudes and Practices (KAP) towards COVID-19 prevention measures among private clinic patients in Windhoek during 1 October to 30 November 2021. A cross-sectional analytic study using quantitative method was used with data collected in a single round among patients visiting two private clinics in Windhoek. Results showed that more than half (62%) were females, 58.5% were single and 70% attended tertiary education and 71% were employed as of 30 November 2021. In addition, at least 90% of the participants knew each of the COVID-19 prevention measures, while more than three-quarters (79%) had comprehensive knowledge of the measures, with 65% of them knowing that one needs two shots of the COVID-19 vaccine for immune protection against the virus. At least 90% of the participants were in favour of practicing each COVID-19 prevention measure, while more than three-quarters (81.5%) had comprehensive positive attitude towards the measures in general. However, less than half (48%) of the participants believed that the COVID-19 vaccines can prevent one from the virus. Moreover, more than 95% of the participants were practicing each COVID-19 prevention measures, with 90% practicing all the prevention measures at the same time, with the exception of the COVID-19 vaccination as only 37% of the participants were vaccinated. Seeing as the participants had very good knowledge, attitudes and practices towards COVID-19 prevention measures, with barely more than a quarter of them vaccinated against COVID-19, the health education and awareness of COVID-19 in the country must continue in order to maintain the very good KAP of its prevention measures in Windhoek.

1. Introduction

In December 2019, a new virus (initially) called the 'Novel Coronavirus 2019-nCoV' (later renamed the SARS-CoV-2 by the World Health Organization (WHO) emerged in Wuhan, Hubei Province, China, and later spread rapidly to other parts of China and eventually across all countries around the world, despite China's massive efforts to contain the disease within Hubei in 2019 (Boulos & Geraghty, 2020). The SARS-CoV-2 virus, often referred to as the COVID-19 virus causes severe to fatal acute respiratory syndrome with no known cure for it, thus making it a global public health to date. According to the Worldmeter COVID-19 live

update, as of 16 February 2022, the world recorded a total of 416,326,701 COVID-19 cases globally, with 5,858,384 deaths and 339,213,703 recoveries. In South Africa, there were a total of 3,645,269 confirmed cases, with 97,431 deaths and 3,511,001 recoveries, while in Namibia, a total of 156,843 confirmed cases, 3,995 deaths and 152,182 recoveries were recorded. In addition, COVID-19 has caused over 15,000 residents to lose their jobs due to the national lockdowns and restrictions enforced by the president and national security forces of Namibia to curb

the spread of the virus in the country, while the months of June to August 2021 saw over 2,000 died as a result of COVID-19 among residents of Namibia, across different age groups with and without comorbidities.

Just like other countries in the world, The Namibian Newspaper on 23 December 2021 (pg. 6) stated that Namibia battled two COVID-19 variants (Beta and Delta) in 2021, while the less-known Omicron variant at the time was driving the country's fourth wave of infections. The drastic effect of the Delta variant saw the Namibian health system crack under pressure during the third COVID-19 wave as lack of hospital beds and oxygen tanks in both government and private health facilities left health workers with extremely difficult daily decisions to make due to the exponential increase in the daily rates at which residents infected with COVID-19 were rushing to health facilities across the country for medical assistances. In addition, the third wave was so ravaging that it resulted in a total of 67,525 new infections and over 2,400 deaths in just three months (June to August) in Namibia. The WHO first confirmed that this variant which was first discovered in India in June 2021, and later became detectable in a total of 98 countries globally. On 5 July 2021, the Ministry of Health and Social Services (MoHSS) confirmed the presence of the Delta variant in positive samples tested in the Khomas region of Namibia.

Moreover, in December 2021, Namibia confirmed the Omicron variant in the country, which later drove the country to the fourth wave outbreak. As of 21 December 2021, there were 10,643 active cases recorded in the country, with 3,593 COVID-19 deaths recorded since the beginning of the pandemic in Namibia in March 2020 (MoHSS, 2021). Just as done in other countries globally, the COVID-19 vaccination campaign in Namibia was launch in March 2021, with less than 25% of the population vaccinated by December 2021 (MoHSS, 2021). However, during December 2021, the daily vaccination rate increased by 10% compared to all other months since March 2021 (MoHSS, 2021).

According to MoHSS report in 2022, as of 16 February 2022, Windhoek alone recorded a total of 50,944 COVID-19 cases and 901 deaths. Therefore, this study was commissioned to assess the Knowledge, Attitudes and Practices (KAP) towards COVID-19 prevention measures among patients attending two private clinics in Windhoek and suggest recommendations to reduce the COVID-19 transmission.

2. Methods

A cross-sectional analytic study using quantitative method was used with data collected in a single round among patients visiting two private clinics in Windhoek. Considering the target population, a

systematic random sampling was used to select the sample members of 200- patients from 1 October to 30 November 2021. To be precise, every third patient visiting the selected private clinics was selected to participate in this study until the desired sample size (200 patients) was reached. The inclusion criteria of this study were all patients visiting the selected two private clinics in Windhoek aged at least 18 years.

The sample size of this study was estimated based on the average number of patients seen per month at the two selected private clinics in Windhoek using a two-stage procedure as follows. The first stage was to determine the target population, which was based on the monthly average of the patients visiting the two selected private clinics. On average, there were 985 visiting patients in one clinic and 840 patients in the second clinic, loosely translated to a total of 1825 patients per month in these clinics. The second stage was the sampling selection of the sample members to consider in this study, achieved by using the systematic random sampling, with every third patient visiting the clinics selected till the desired sample size of 200 was achieved. Afterwards, data were collected from the patients that satisfied the inclusion criteria of this study within the two private clinics in Windhoek, through the use of a structure questionnaire. This questionnaire consisted of two sections: the demographic section (age, sex, educational level, occupation and marital status) and the KAP towards COVID-19 prevention measures section. The total of 200 patients were selected for the purpose of the study based on the following assumptions: (i) 50% chance of finding patients with comprehensive knowledge of COVID-19 prevention measures; (ii) precision of 95% confidence interval; (iii) a 10% marginal of error between the target population and sample; and (iv) a design effect of 2 to capture clustering between the two clinics.

The collected data was extracted from the completed questionnaires and captured on a Microsoft Excel spreadsheet. The data were later analyzed using SPSS version 23. For the data analysis of this study, the descriptive statistics technique was used to showcase the Counts and percentage distributions of the patients' responses in figures and tables, while the chi-square tests for associations was performed to assess the crude associations between the KAP COVID-19 prevention measures against the patients' demographic variables, with a significant association occurring when p -value < 0.05 .

3. Results

3.1 Sociodemographic characteristics of the participants

Out of the 200 participants considered in this study, 124 (62%) were females while 76- (38%) were males as shown in Table 1. Majority (43.5%) of the participants

were aged 25 to 34 years old, followed by 22.5% aged 35-44 years old, while only 3.5% were aged 55 years and above. Likewise, majority of the participants were single, had tertiary education, employed and were students as shown in Table 1.

Table 1: Sociodemographic characteristics breakdown of the 200 participants

Characteristics	Counts	Percentage
Sex		
Male	76	38
Female	124	62
Age (in years)		
18-24	31	15.5
25-34	87	43.5
35-44	45	22.5
45-54	30	15.0
55+	7	3.5
Education		
Primary	4	2
Secondary	56	28
Tertiary	140	70
Occupation		
Unemployed	18	9
Employed	142	71
Students	40	20
Marital status		
Single	117	58.5
Married	72	36
Others	11	5.5

3.2 Knowledge of COVID-19 prevention measures

From this study, more than 90% of the participants knew that one can prevent COVID-19 by social distancing (92.5%), hands sanitizing (91.5%), washing hands (91%) and wearing masks (90.5%) as shown in Table 2. Moreover, the general symptoms of COVID-19 include fever or chills, headache, fatigue and muscle or body aches, with the respiratory symptoms including congestion or runny nose, sore throat, cough and shortness of breath or difficult breathing while the digestive symptoms included nausea and/or vomiting, and diarrhoea. Apart from these symptoms, new loss of taste and smell have been highly linked to COVID-19 infection diagnosis. From this study, 94% of the participants knew the general symptoms of COVID-19, while 97% knew the respiratory symptoms, 88% knew the digestive symptoms and 98% knew that new loss of taste and smell were symptoms of COVID-19 as shown in Table 2. In addition, 83% of participants knew that one can have COVID-19 without symptoms and 17% did not know. From these deductions, it can be concluded that the knowledge of COVID-19 symptoms and prevention measures were very good among the participants. In Namibia, as of 1 October 2022, there were mainly AstraZeneca and Sinopharm COVID-19

vaccines that needed two separate doses, each at different interval, for one to be fully immunized. From this study, 65% of the participants knew that one needed two doses of the COVID-19 vaccine to be protected, while, 91% believed that a person that was fully vaccinated against COVID-19 virus can still get infected with the virus and 78.5% knew that a person fully vaccinated against the virus will have minor symptoms compared to a person that was not vaccinated once infected with COVID-19 as shown in Table 2. In addition, 90.5% of the participants knew that a person vaccinated can still die from a COVID-19 infection, while 79.5% stated that a fully vaccinated person can still transmit the virus to others.

Table 2: Knowledge of COVID-19 prevention measures among the 200 participants

	Counts	Percentage
Knowledge of COVID-19 prevention measures		
Prevention by social distancing	194	92.5
Prevention by sanitizing hands	183	91.5
Prevention by washing hands	182	91
Prevention by wearing masks	181	90.5
Knowledge of COVID-19 symptoms		
General symptoms of COVID-19	188	94
Respiratory symptoms of COVID-19	194	97
Digestive symptoms of COVID-19	176	88
New loss of taste and smell	196	98
Knowledge of COVID-19 vaccine		
2 shots for COVID-19 prevention	130	65
Fully vaccinated can still get COVID-19	182	91
Vaccinated person will have minor than unvaccinated	157	78.5
Vaccinated person can still die from COVID-19	181	90.5
Vaccinated person can still transmit COVID-19	159	79.5

3.3 Attitudes towards COVID-19 prevention measures

Furthermore, looking at the participants’ attitude towards COVID-19 prevention measures, 91% of the participants stated that practising social distancing was necessary to prevent a COVID-19 infection, 94.5% stated sanitizing hands was necessary as part of the prevention measures, 89.5% stated that it was important to wash hands and 90% stated that it was important to always wear mask in public places to prevent COVID-19 as shown in Table 3. From these deductions, it can be concluded that most participants had a very good attitudes towards COVID-19 prevention measures. In addition, less than half (48%) of participants stated that COVID-19 vaccine prevents COVID-19 infection. All participants used self-medication or tried something different to prevent COVID-19 infection, with 87.5% of them using vitamins (immune booster), 95.5% used lemon, 78.5% used ginger, 77.9% used garlic, 95% used steaming, 81.5% used hot water/tea and 54.5% used honey as shown in Table 3. However, only 8% of the participants used Ivermectin as part of their COVID-19 prevention measures.

Table 3: Attitudes towards COVID-19 prevention measures among the 200 participants

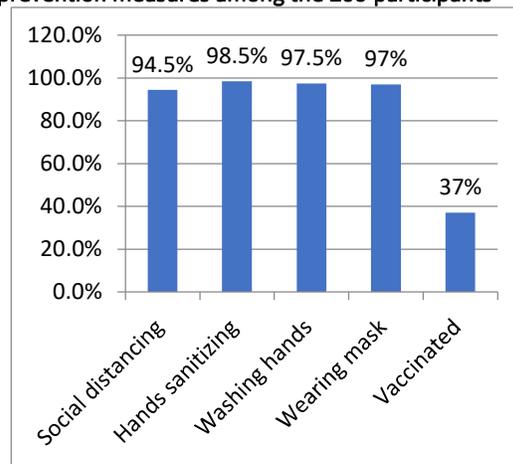
	Counts	Percentage
Attitudes towards COVID-19 prevention measures		
Think that social distancing is essential	182	91
Sanitizing hands is essential	189	94.5
Washing hands is essential	179	89.5
Wearing face mask is essential	180	90
Attitudes towards COVID-19 vaccine		
Think that COVID-19 vaccine prevents COVID infection	96	48
Think that COVID-19 vaccine prevents COVID-19 severity	159	79.5
Self-medication for COVID-19 prevention		
Vitamins/Immune Booster	175	87.5
Lemon	191	95.5
Ginger	157	78.5
Garlic	156	77.9
Steam	190	95
Hot water/tea	163	81.1
Honey	109	54.5
Ivermectin	16	8

3.4 Practices of COVID-19 prevention measures

The comprehensive knowledge on the prevention of COVID-19 considered in this study included social distancing, sanitizing hands, washing hands and wearing masks, as shown in Figure 1. The comprehensive knowledge of COVID-19 vaccine

assumed that the person knows that a COVID-19 vaccine exists, one needs two shots to be protected, a person fully vaccinated can still get COVID-19, a vaccinated person can get minor symptoms than the unvaccinated, a person fully vaccinated can still die from COVID-19 and a vaccinated person can still transmit COVID-19. More than three quarters (i.e. 79%) of the participants had comprehensive knowledge of COVID-19 prevention measures, with 38% having a comprehensive knowledge of COVID-19 vaccine, while 60% knew 5 of the 6 comprehensive COVID-19 vaccines. Moreover, regarding the attitudes and practices of participants towards COVID-19 prevention measures, 81.5% of the participants thought that all prevention measures must be adhered too while 90% of participants adhered to all four listed COVID-19 prevention measures.

Figure 1: Bar plot of the practices of COVID-19 prevention measures among the 200 participants



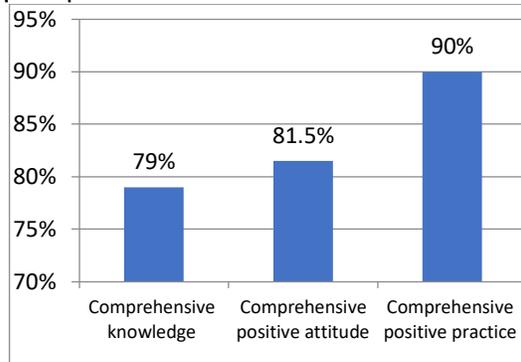
3.5 Comprehensive KAP towards COVID-19 prevention measures

Further a comparative analysis showed that 74.2% of the young adults aged 18-24 years (n=31) had comprehensive knowledge of COVID-19 prevention strategies, 80.6% had comprehensive positive attitudes and 96.8% had comprehensive positive prevention measures towards COVID-19. In addition, 73.6% of participants aged 25-34 years (n=87) had comprehensive knowledge of COVID-19 prevention measures, while 78.2% had comprehensive positive attitudes and 89.7% had comprehensive positive practices towards COVID-19.

Furthermore, 86.7% of the participants aged 35-44 years (n=45) had comprehensive knowledge of COVID-19 prevention measures, 86.7% had comprehensive positive attitude and 82.2% had comprehensive positive practice towards COVID-19. In fact, 86.7% of the participants aged 45-54 years (n=30) had

comprehensive knowledge of COVID-19 prevention measures, 80% had comprehensive positive attitude and 93.3% had comprehensive positive practice towards COVID-19. Finally, 85.7% of participants aged 55 years or more (n=7) had comprehensive knowledge of COVID-19 prevention strategies, all (100%) had comprehensive positive attitudes and all (100%) had comprehensive positive practice towards COVID-19.

Figure 2: Bar plot of the comprehensive KAP towards COVID-19 prevention measures among the 200 participants



3.6 Age and comprehensive knowledge, positive attitudes and positive practice

Furthermore, regarding sex and comprehensive knowledge, positive attitudes and practices towards COVID-19, 78.2% of the female participants (n=124) and 80.3% of the male participants (n=76) had comprehensive knowledge of COVID-19 prevention strategies as shown in Table 4. There was no difference between males and females with regard to comprehensive knowledge of COVID-19 prevention strategies. In addition, 78.2% of the female participants and 80.3% of the male participants had comprehensive positive attitudes towards COVID-19. There was no difference between males and females with regards to comprehensive positive attitudes towards COVID-19. Finally, 89.6% of the female participants and 93.4% of male participants had comprehensive positive practice of COVID-19. Also, there was no difference between males and females with regard to comprehensive positive practice towards COVID-19.

3.7 Crude associations between the KAP COVID-19 prevention measures against the patients' demographic variables

With regard to level of education, of the only 4 participants who attended primary education, 50% had had comprehensive knowledge of COVID-19 prevention measures, 85.7% of participants (n=56) who attended secondary education and 77.1% of

participants (n=140) who attended tertiary education had comprehensive knowledge of COVID-19 prevention measures. The difference was not statistically significant ($X^2=3.831$, p-value= 0.147) at a 5% level of significance. In addition, 75% of the participants who attended primary education, 83.9% of those who attended secondary education and 81.5% of those who attended tertiary education had comprehensive positive attitude towards COVID-19 p-value. The difference was not statistically significant ($X^2=0.388$, p-value=0.823). In fact, 75% of participants who had primary education, 91.1 % of those who attended secondary education and 90% of those who attended tertiary education had comprehensive positive practice towards COVID-19 prevention measures. The difference was not statistically significant ($X^2=1.071$. p-value=0.585).

Table 4: Distribution of the participants' sex and their comprehensive positive KAP

	Counts	Percentage
Sex and comprehensive positive knowledge		
Sex		
Female	97	78.2
Male	61	80.3
Otherwise		
Sex and comprehensive positive attitudes		
Sex		
Female	97	78.2
Male	61	80.3
Otherwise		
Female	27	21.8
Male	15	19.7
Sex and comprehensive positive practice		
Sex		
Female	109	89.9
Male	71	93.4
Otherwise		
Female	15	12.1
Male	5	6.6

4. Discussion

This study was conducted among patients aged at least 18 years attending two private clinics in Windhoek on KAP towards COVID-19.

Regarding the prevention measures of COVID-19 knowledge, this study showed that with regard to comprehensive prevention of COVID-19, knowledge

that includes social distancing, sanitizing hands, washing hands and wearing masks. Out of the 200 participants, 79% had comprehensive knowledge of COVID-19 prevention measures and more than three quarters had very good knowledge of COVID-19. This can be due to the explosive flow of information on all platforms, especially the media, social media and MoHSS continuous update. However, this is not consistent with the study conducted by Gebretsadik, Gebremichael and Belete (2021) in one health centre in the Northeast Ethiopia whereby of the 384 participants, 51.3% had good COVID-19 prevention measures knowledge. In addition, according to Hoque et al. (2021), the study conducted among pregnant women in one primary health care in South Africa, revealed that both knowledge and attitude mean of pregnant women were found to be low at 43.5% and 30% respectively. The South African study revealed that less than half of participants had good knowledge of COVID-19 prevention measures. This current study revealed that the participants visiting private clinics in Windhoek had better knowledge compared to those of Northeast Ethiopia and those in one primary health centre in South Africa.

Furthermore, regarding the attitudes of COVID-19 prevention measures, this study showed that more than three quarters (89.5%) of participants stated that it is important to wash hands to prevent COVID-19. This is consistent with the Akalu, Ayelign and Molla (2020) whereby less than three quarters (73.2%) of participants perceived that washing hands frequently for 20 seconds with soap or using sanitizer is very easy. At least these two studies have their majority in favour of frequent hand washings. This current study further showed that 91% stated that practising social distancing was necessary to prevent COVID-19 prevention measures, which is not consistent with the findings from Akalu, Ayelign, Molla (2020), whereby more than half (51.7%) of – the participants perceived that practicing physical distance is very difficult.

A systematic review and meta-analysis done of 13 studies conducted in Ethiopia in by Gebretsadik, Gebremichael and Belete (2021) on KAP practice towards COVID-19 showed that 69.1% of the participants had a good attitude towards COVID-19. This is consistent with this current study whereby 81.5% of participants thought that all prevention strategies must be adhered too. Although, more than three quarters in this study showed good attitudes as compared to less than three quarters in the meta-analysis, most participants showed good attitudes towards COVID-19 prevention measures. Thus, it is encouraging that the participants are in favour of respecting the barrier measures.

Moreover, this study showed that most participants (more than 90%) practiced each of the four prevention strategies. This is not consistent with the study

conducted by Gebretsadik, Gebremichael & Belete (2021) whereby the magnitude or level of poor practice among the participants visiting one health centre Northeast Ethiopia was found to be 41.7%. So, even in terms of practices, participants from the two private clinics in Windhoek adhered to barrier methods than those from one health centre in Northeast Ethiopia. This can be due to the fact that in 2021, a compulsory mandate of wearing masking, social distancing handwashing and sanitation made by the president of the country were strictly enforced throughout the country by national security and police forces across Namibia and became the requirements to entering into a business building.

In fact, according to Hoque et al, (2021), the study conducted among pregnant in one primary health care in South Africa on KAP towards COVID-19 prevention measures showed that their practice on the prevention of COVID-19 was good at 76%. At least three-quarters had good practices towards COVID-19, which is very good as compared to the 41.7% in Northeast Ethiopia. In this current study, the practices towards COVID-19 prevention measures were better compared to both South Africa and Northeast Ethiopia.

Furthermore, this current is consistent with the 2020 study conducted by Zhou et al among Healthcare Workers (HCWs) on knowledge, practices and attitudes regarding COVID-19, showed that of the 1357 HCWs across 10 hospitals in Henan, China, 89.7% followed correct practices with regard to COVID-19. It is encouraging that the participants in the two private clinics in Windhoek have very good KAPs towards COVID-19 prevention measures. This is among patients with medical aids and who have means to visit private clinics. So, this might be different from patients attending state hospitals. However, this can be addressed in another study would be interesting to see whether there are similarities or differences.

5. Conclusion

Seeing as the participants had very good knowledge, attitudes and practices towards COVID-19 prevention measures, with barely more than a quarter of them vaccinated against COVID-19, the health education and awareness of COVID-19 in the country must continue in order to maintain the very good KAP of its prevention measures in Windhoek and eventually throughout the country.

References

- Lee, M., Kang, B. & You, M. (2021). Knowledge, attitudes, and practices (KAP) towards COVID-19: a cross-sectional study in South Korea. *BMC Public Health* volume 21 number: 295.
- Boulos, M.N.K. & Geraghty, E.M. (2020). Geographical tracking and mapping of coronavirus COVID-19/severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic and associated events around the world: how 21st century GIS technologies are supporting the global fight against outbreaks and epidemics.
- Worldometers COVID-19 Live Update (2021). www.worldometers.info
- Hopkins J. COVID-19 Dashboard (2021). Center for Systems Science and Engineering (CSSE). Coronavirus. Resource Center.
- WHO (2021). COVID-19: Situation Update for WHO African Region. World Health Organization; 2021: 5-19
- Alrasheedx A. A, Abdulsalim S, Farooqui M, Alshahali S & Godman B (2021). Knowledge, Attitudes and Practice About Coronavirus Disease (COVID-19) Pandemic and Its Psychological Impact on Students and Their Studies: A Cross-sectional Study Among Pharmacy Students in Saudi Arabia. Volume 2012: 14 Pages 729-741. DOI <https://doi.org/10.2147/RHHP.S292354>
- Gebretsadik D, Gebremichael S & Belete M.A (2021). Knowledge, Attitudes and Practice Towards COVID-19 Pandemic Among Population Visiting Dessie Health Centre for COVID-19 Screening, Northeast Ethiopia. Volume 2021: 14 pages 905-915. DOI <https://doi.org/10.2147/IDR.S297047>
- Akalu Y, Ayelign B, & Molla MD (2020). Knowledge, attitude and practice towards COVID-19 among chronic disease patients at Addis Zemen Hospital, Northwest Ethiopia. *Infect Drug Resist*. Doi:10.2147/IDR.S258736
- Hoque A.M., Alam A.M., Hoque M.E. & Van Hal G (2021). Knowledge, attitudes and Practices towards COVID-19 of pregnant women at a primary health care Facility in South Africa. Vol 3 No 1. Doi <https://doi.org/10.24018/ejemed> 2021
- Azene A.G., Workie M.S. & Aragaw A.M (2021). Knowledge, attitude, and prevention practice towards COVID-19 in Ethiopia: systematic review and Meta-analysis. Doi <https://doi.org/10.1016/j.curtheres> 2021. 100633Get rights and content.
- Zhou M, Tang F, Wang Y, Nie H, Zhang L, You G, & Zhang M. (2020). Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China. *Journal of Hospital Infection*. 105(2): 183-87.