

Cross-Sectional Study on Knowledge, Attitude and Practice of Pharmacist at Community Pharmacy in Indonesia about COVID-19

Yelly Oktavia Sari, Dedy Almasdy, Dini Rizki Amalia
Faculty of Pharmacy, Andalas University Padang,
West Sumatera, Indonesia

Abstract:- COVID-19, which first occurred in Wuhan, China, has spread rapidly to almost all countries including Indonesia and was announced by the WHO as a pandemic. The Indonesian government establishes a “Task Force Acceleration of Handling COVID-19” for handling COVID-19. Pharmacists are an important part of the health care system and play a role in perfecting the COVID-19 outbreak management cycle. Pharmacists play a role in ensuring the continued functioning of the health care system in the detection, prevention and management of cases. In this practice, pharmacists need knowledge, attitudes and practices related to COVID-19. This study aims to evaluate knowledge, attitudes and practices of pharmacists in Community Pharmacy in Indonesia about COVID-19, and examines the relationship between these three variables. This research is a cross-sectional study, and the sampling technique is purposive sampling. The study instrument was a validated questionnaire that was distributed through social media (WhatsApp). 178 pharmacist was qualified to participate in this study. The results of the study showed that pharmacists have a high level of knowledge (83.1%), positive attitude (54.5%) and good practices (57.3%) about COVID-19. In this study, knowledge level of pharmacists was influenced by the education level, attitudes was influenced by the education level and the province’s recovery rate, while practice was influenced by gender. Statistical analysis between knowledge, attitude and practice of pharmacists about COVID-19 showed that there was a significant relationship between knowledge with attitude and attitude with practice and knowledge with practice ($p < 0.05$).

Keywords:- COVID-19, Knowledge, Attitude, Practice, Community Pharmacy.

I. INTRODUCTION

The mysterious pneumonia cases that was first reported in Wuhan, China's Hubei Province in December 2019 has spread widely to various other provinces in China and several other countries in a short time (1). This virus is named SARS-COV-2 and the disease caused by this virus is named COVID-19 (2). On March 11, 2020, WHO declared COVID-19 a pandemic (3). The first case in Indonesia was detected and announced on March 2, 2020 by President Jokowi (4). The number of incidents in Indonesia continues to increase with a morbidity rate of 8.7% which is the highest rate in Southeast Asia and much higher than China (4%) (5).

Pharmacists are an important part of the healthcare system, and their role is critical in perfecting the COVID-19 outbreak management cycle (6). Pharmacists at community pharmacy provide patient-oriented pharmaceutical care and practice in drug stores (7). Patient-oriented pharmaceutical care in community pharmacy during the COVID-19 period must pay attention to the sanitation of dispensing room and personal protection of personnel in customer service, and it is necessary to provide education on preventing COVID-19 transmission to customers(8).

In their practice, pharmacists in community pharmacy have very big possibilities for contracting this pandemic. As pharmacists in community pharmacy have direct contact with patients during this crisis, understanding their knowledge, attitudes and practices towards COVID-19 is important to classifying misconceptions about COVID-19 treatment and to contribute of COVID-19 screening.

This research to evaluated of the level of knowledge, attitude and practice of pharmacist at community pharmacy in Indonesia about COVID-19.

II. RESEARCH METHOD

This research is an observational study with a cross-sectional study design. This research was conducted on pharmacists who served in drug stores/ community pharmacy spread across several provinces in Indonesia during the past few months (± 6 months) in December 2020 to May 2021.

The instrument used in this study was a questionnaire designed on Google forms platform®. The questionnaire was developed largely based on the World Health Organization (WHO) Questions and Answers on COVID-19 and from several existing research that was adapted to the pharmaceutical study. Respondents in this study were selected by purposive sampling method according to the inclusion criteria and exclusion criteria set by the researcher. The content validity test was carried out by experts, namely five pharmacists and one linguist. The validity and reliability testing was then carried out on 30 people according to the general rules of research in order to obtain a distribution of research results that approached the normal curve (9).

The data collection method was carried out by distributing online questionnaires through social media (WhatsApp) by providing a link that was connected to the questionnaire to be filled out by the respondents. The questionnaire contains 47 questions including: socio-demographic data (10 questions), knowledge level evaluation (17 questions), attitude (8 questions) and practice (12

questions) in pharmaceutical care and practices about COVID-19. After the data collected, then its tabulated and coded. The data then processed using the SPSS program version 16. The relationship of respondents' demographic characteristics with the knowledge level, attitudes and practices was determined using Chi Square. While Spearman's correlation is used to determine the relationship between these three variable that is relationship knowledge with attitude, attitude with practice and knowledge with practice of pharmacist in Community Pharmacy about COVID-19.

III. RESULT AND DISCUSSION

The respondents who met the inclusion criteria was 178 respondents. From the socio-demographic data, respondents were categorized by gender, age, education level, marital status, experience and the division of provinces based on the recovery rate. Based on the results listed in table 1, out of 178 respondents it is known that most of the respondents are female pharmacists as many as 127 respondents (71.3%) with

the most age in the range <35 years as many as 93 respondents (52.2%) who are married as many as 146 respondents (82.0%) with education level an average of 154 are a pharmacists (86.5%) and experienced as a pharmacist ≤ 10 years as many as 117 respondents (65.7%) who generally work in provinces with a moderate recovery rate of COVID-19 as many as 129 respondents (72.5%).

Most of the respondents obtained information about COVID-19 from social media (36.2%) and television (31.3%). Pharmacists need to have the right information about COVID-19 and convey that knowledge to the public. The use of accurate information media tools is one of the basic requirements to prevent and control the spread of disease (10). The type of information most needed by respondents was about infection prevention and control (36.5%). This supports the research results that the level of pharmacist participation in offline or online training is very low.

No	Characteristics of Respondents	n = 178	
		F	%
1	Gender		
	Man	51	28.7
	Woman	127	71.3
2	Age		
	< 35 years old	93	52.2
	≥ 35 years old	85	47.8
3	Marital status		
	Not Married	32	18.0
	Married	146	82.0
4	Education level		
	Pharmacist	154	86.5
	Pharmacist with additional education(master/doctor)	24	13.5
5	Experience		
	≤10 years	117	65.7
	> 10 years	61	34.3
6	Provincial Division		
	Province with high recovery rate	29	16.3
	Province with moderate recovery rate	129	72.5
	Provinces with low recovery rate	20	11.2
7	Resources		
	Television	142	31.3
	Social media	164	36.2
	Health workers	71	15.7
	Scientific journals	63	13.9
	Other	13	2.9
8	More information needed		
	Pathology	86	19.4
	Infection Prevention and Control	162	36.5
	Diagnosis	57	12.8
	Treatment	131	29.5
	Other	8	1.8

Table 1: Distribution of pharmacists' socio-demographic characteristics in community pharmacy in Indonesia

The results of data collection using a questionnaire about the level of knowledge of pharmacists at Community Pharmacy in Indonesia about COVID-19 can be seen in table 2.

Question	True Frequency (%)
Fever, fatigue, convulsions and dry cough are the main symptoms of COVID-19	54 (30.3)
The incubation period (from exposure to the first appearance of symptoms) of COVID-19 is 2-5 days	75 (42.1)
The virus that causes COVID-19 can spread through respiratory droplets when a patient coughs/sneezes even though they are more than two meters away	83 (46.6)
There is no difference in the risk of potential exposure to pharmacists who work in services with pharmacists who work in non-services.	86 (48.3)
The first case of COVID-19 was discovered in Hainan, China.	87 (48.9)
<i>Azithromycin/levofloxacin</i> given to COVID-19 patients to kill the SARS-2 corona virus	87 (48.9)
Mixing bleach and household cleaning to get the maximum disinfectant is the right thing to do.	90 (50.6)
Individuals aged < 60 years and do not have health problems may use non-medical masks	113 (63.5)
WHO prohibits the use of <i>dexamethasone</i> in non-severe COVID-19 patients, unless the patient has received other therapy	145 (81.5)
<i>Vitamin D</i> in COVID-19 therapy is needed by people who are not exposed to sunlight (isolation)	148 (83.1)
All patients who are positive for COVID-19 have symptoms	149 (83.7)
To reduce the transmission of COVID-19, disinfection of environmental surfaces can use <i>Na. Hypochlorite (eg: Bayclin) 0.1%</i>	153 (86.0)
Use <i>chloroquine</i> for COVID is not recommended because it can cause heart rhythm disturbances	153 (86.0)
Always and regularly wash your hands with soap or <i>Hand sanitizer</i> can reduce the spread of the COVID-19 virus.	166 (93.3)
Avoiding touching your eyes, nose and mouth when serving patients can prevent COVID-19 infection.	166 (93.3)
COVID-19 is a disease caused by the SARS 2 Corona virus (SARS-CoV-2).	169 (95.0)
Using a mask or face shield and the presence of a glass barrier when serving patients who redeem drugs can reduce the spread of COVID-19	173 (97.2)

Table 2: Distribution of respondents based on knowledge questions

From the question of the level of knowledge of pharmacists, 95% of respondents know that COVID-19 is a disease caused by Corona virus SARS 2 (SARS-CoV-2). From the achievement of the highest score, it can be understood that almost all respondents know how to protect themselves from transmission of COVID-19, by using a mask or face shield and the presence of a glass barrier when serving patients who redeem drugs (97.2%), avoiding touching the eyes, nose and mouth when serving patients (93.3%), Always and regularly washing hands with soap and hand sanitizer (93.3%) can reduce the spread of COVID-19. This is similar with that

found in Nigeria at 91%(11) and higher than that found in Ethiopia and Egypt by 68% and 66.7% (12),(10).

The lowest achievement was found in questions regarding the main symptoms of COVID-19, namely fever, tired and dry cough that is, only 30.4% of respondents who answered correctly were different from those who answered correctly Found by Cacodcar about 61% (13), and by Alzoubi about 68.4% (14). According to WHO the most common symptoms today are fever, fatigue, cough, and loss of the ability to feel or smell (anosmia).

Question		f(%)
I am willing to explain to patients how to prepare disinfectant at home	Strongly disagree	0 (0)
	Do not agree	1 (0.6)
	Neutral	8 (4.5)
	Agree	98 (55.0)
	Strongly agree	71 (39.9)
I am willing to provide pharmaceutical services for patients with COVID-19 infection with complete PPE	Strongly disagree	1 (0.6)
	Do not agree	9 (5.0)
	Neutral	30 (16.9)
	Agree	65 (36.5)
	Strongly agree	73 (41.0)
I feel uncomfortable when patients wait for drugs at the Pharmacy/Pharmaceutical Installation without keeping a distance.	Strongly disagree	0 (0)
	Do not agree	0 (0)
	Neutral	19 (10.7)
	Agree	69 (38.8)
	Strongly agree	90 (50.6)
I am worried that when I serve patients there is no glass barrier between me and the patient	Strongly disagree	0 (0)
	Do not agree	1 (0.6)
	Neutral	15 (8.4)
	Agree	68 (30.2)
	Strongly agree	94 (52.8)
I am afraid that while working in pharmaceutical facilities I do not use PPE (masks, face shields or gloves).	Strongly disagree	0 (0)
	Do not agree	0 (0)
	Neutral	14 (7.9)
	Agree	70 (39.3)
	Strongly agree	94 (52.8)
I feel the need to ensure the availability of pharmaceutical supplies needed for handling COVID-19	Strongly disagree	0 (0)
	Do not agree	0 (0)
	Neutral	13 (7.3)
	Agree	58 (32.6)
	Strongly agree	107 (60.1)
I'm worried if the patient who redeems the drug to the pharmacy/pharmacy installation doesn't wear a mask	Strongly disagree	0 (0)
	Do not agree	0 (0)
	Neutral	3 (1.7)
	Agree	59 (33.1)
	Strongly agree	116 (65.2)
If I am exposed to COVID-19, I will isolate according to the COVID-19 handling guidelines	Strongly disagree	0 (0)
	Do not agree	1 (0.6)
	Neutral	3 (1.7)
	Agree	54 (30.3)
	Strongly agree	120 (67.4)

Table 3: Distribution of respondents based on attitude questions

Judging from the level of achievement of the respondents in each of their statements of attitude about COVID-19, it was found that respondents have positive attitude about COVID-19, it was found in their statements that responded to worry when patients who redeemed drugs at the Community Pharmacy/drug stores did not wear masks, that achievement of respondents' attitudes reached 65.2%. This is supported by research conducted by Zhang that 85% of health workers are worried that they will be exposed to the COVID-19 virus in the workplace(15). In addition, in a study in Jordan, 68.4% of

respondents believed that using a mask could reduce the spread of the virus(14).

While the lowest achievement of respondents' attitudes can be seen from their statements about their willingness to explain to patients about how to prepare disinfectants at home, where in this statement only 39.9% agreed. This is supported by the level of knowledge of pharmacists who are still lacking in how to prepare disinfectants at home and that mixing bleach and household cleaning is wrong. This question was answered correctly by only 50.6% of respondents.

Question		f(%)
Did you participate in any training related to COVID-19 during the pandemic (offline or online)	Always	35 (19.7)
	Often	58 (32.6)
	Seldom	54 (30.3)
	Never	31 (17.4)
Are you educating the public regarding COVID-19.	Always	49 (27.5)
	Often	59 (33.1)
	Seldom	57 (32.0)
	Never	13 (7.3)
Do you limit the number of patients waiting for drugs at the pharmacy/pharmacy?	Always	65 (36.5)
	Often	71 (39.9)
	Seldom	30 (16.9)
	Never	12 (6.7)
Do you clean the surface area where the work area is with disinfectant.	Always	91 (51.1)
	Often	70 (39.3)
	Seldom	16 (9.0)
	Never	1 (0.6)
I remind patients who will enter the Pharmacy / Pharmacy Installation to put on the correct mask	Always	95 (53.4)
	Often	60 (33.7)
	Seldom	20 (11.2)
	Never	3 (1.7)
Do you always keep your distance from people who come to the pharmacy/pharmacy installation?	Always	108 (60.7)
	Often	62 (34.8)
	Seldom	8 (4.5)
	Never	0 (0)
Do you always use a mask, face shield or gloves at work?	Always	117 (65.7)
	Often	50 (28.1)
	Seldom	10 (5.6)
	Never	1 (0.6)
Do you wash your hands the right way?	Always	119 (66.9)
	Often	55 (30.9)
	Seldom	4 (2.2)
	Never	0 (0)
I make sure the hand washing facilities where I work are functioning properly	Always	120 (67.4)
	Often	47 (26.4)
	Seldom	7 (3.9)
	Never	4 (2.2)
Do you avoid touching your eyes, nose or mouth when interacting with patients or customers?	Always	125 (70.2)
	Often	46 (25.8)
	Seldom	7 (3.9)

	Never	0 (0)
After work, do you follow the health protocol when you get home (shower and change clothes)	Always	128 (71.9)
	Often	41 (23.0)
	Seldom	9 (5.1)
	Never	0 (0)
Do you ensure the availability of masks at your pharmacy/pharmacy installation	Always	145 (81.5)
	Often	31 (17.4)
	Seldom	2 (1.1)
	Never	0 (0)

Table 4: Distribution of respondents by practice questions

Judging from the level of achievement of respondents in each statement about their practices on COVID-19, it was found regarding their practice efforts against COVID-19 well found in their statements that ensure the availability of masks (81.5%), follow health protocols when they get home (71.9%) and always avoid touching their eyes, mouth and nose when interacting with people. other people, and always implement health protocols when they get home from work (70.2%). This is also supported by the high achievement rate in respondents' knowledge that in addition to avoiding touching the eyes, mouth and nose, the implementation of health protocols can also reduce the spread of this virus. Almost the same as that obtained by Saqlain that pharmacists avoid touching the eyes, nose, and mouth by 74.6%(16). In contrast to research in Saudi Arabia which describes that 90.38% of respondents do not avoid touching their eyes, mouth and nose because they are not related to the spread of the virus(17). Regarding the implementation of the health protocol when coming home from work, Saefi found that only 60.38% of respondents carried out the health protocol (changed clothes) when they came home from work before interacting with other family members(18). Similar to what was found in Bangladesh that 98.6% of respondents always follow health protocols when they return home(19)

In carrying out their role as pharmacists who are responsible for pharmaceutical supplies, especially masks, 81.5% of respondents carry out this role. From the research reported from Jordan that one of the reported roles of pharmacists during a pandemic is ensuring adequate storage and supply of drugs and medical devices in addition to the role in disease prevention and infection control as well as a role in patient care and support for other health professionals(20). This supports the achievement on the question of pharmacist practice who always ensures the availability of masks in pharmacy/pharmacy facilities, which is 81.5%.

While the lowest achievement of respondents' practices can be seen from their statements about the lack of participation in training related to COVID-19 during the

pandemic (offline or online), which in this statement only reached 19.7%. Followed by the practice of pharmacists in educating the public about COVID-19, which only reached 27.5%.

The role of health workers who serve the community is very important in preventing and the handling of COVID-19 at every level of intervention. Medical personnel are considered more capable of understanding the promotive and preventive patterns of COVID-19 in the community. In fact, health workers who serve the community, including officers at pharmacies who are at the forefront of handling COVID-19, are the group most vulnerable to contracting the SARS-CoV-2 corona virus.

Table 5 shows that pharmacists with additional education (master/doctor) have higher knowledge about COVID-19 ($p<0.05$). This provides a significant relationship to the level of pharmacist knowledge about COVID-19. This is similar to that found in Pakistan and Bangladesh that the level of education is significantly related to the level of knowledge about COVID-19(21)(19).

The table also shows that the attitude of respondents in dealing with COVID-19 was significantly higher ($P<0.05$) for pharmacists with additional education (master/doctor). The province's recovery rate also had a significant effect on pharmacists attitude, it was seen that 70% had a negative attitude in provinces with low recovery rates ($P<0.05$). This shows that the recovery rate of a region also affects the attitude of pharmacists.

The practices of pharmacists on COVID-19, both in carrying out pharmaceutical practices and in their roles as pharmacists, shows that practice of female pharmacists have good practices than men ($P<0.05$). Research conducted in Pakistan and Bangladesh, also found that female respondents have good practices in terms of preventing exposure to COVID-19 (that women are more likely to maintain a safe distance than men).

IV. RELATIONSHIP BETWEEN VARIABLES

Variable	Correlation Coefficient	P Value
Knowledge – Practice	0.218	0.003*
Attitude – Practice	0.238	0.001*
Knowledge – Attitude	0.252	0.001*

Table 5: Correlation Score

Correlation between the knowledge level with attitudes, attitudes with practices and knowledge level with practices, it appears that there is a significant correlation between these three variables. In theory it is said that behavioral change requires three stages, namely changing the knowledge level in this case about COVID-19 (cause, symptoms, how to treat, how to transmit, how to prevent, how to maintain health and how to live healthy and how to manage environmental health). After someone knows the stimulus or object, the next process will assess or behave towards the stimulus or object which will have an impact on the pharmacist's attitude about COVID-19 (such as worrying about the causes, modes of transmission, methods of preventing disease, environmental health conditions and their effects on health) Finally, after someone knows the stimulus or object, then conducts an assessment or opinion on what is known, the next process is expected to carry out or practices what is they known or addressed it.

In this study, pharmacists had high knowledge (83.1%), positive attitude (54.5%) and good practice (57.3%). In terms of the effect of knowledge on attitudes and practices obtained in this study is the same as research conducted by Zhang in Henan, China (15). While the research conducted by Alzoubi in Jordan (14) shows no relationship between each variable.

This can be influenced by the massive amount of information regarding vigilance against COVID-19 because it is already announced as a pandemic outbreak. In addition, the incessant socialization of anticipatory movements to prevent transmission. Information that is updated by the World Health Organization (WHO) and also by the Ministry of Health of the Republic of Indonesia on the number of exposure cases also makes every individual, especially those at high risk, more careful.

V. CONCLUSION

Pharmacists at Community Pharmacy have high knowledge (83.1%), positive attitudes (54.5%) and good practices (57.3%). In the relationship of variables with socio-demography, there is a significant relationship ($p < 0.05$) at the education level to pharmacist's knowledge about COVID-19, there is a significant relationship ($p < 0.05$) of education level and the category of provincial recovery rate on pharmacist attitudes against COVID-19 and there is a significant relationship ($p < 0.05$) in gender on pharmacists practices in dealing with COVID-19. From the relationship between variables, there is a significant relationship between knowledge level with practices, attitudes with practices and knowledge level with attitudes of pharmacists in dealing with COVID-19 ($p < 0.05$).

ETHICS APPROVAL

Ethics approval was obtained from the respective ethics committees at the Medical Faculty of Andalas University in West Sumatra, Indonesia. All of the respondents invited to participate in this study gave informed consent before taking part in this study. To protect the informant from any consequences, data were made anonymous (code) before analyses. The views and opinions of each informant were considered equally.

RESEARCH LIMITATIONS

Data on the number of pharmacists at Community Pharmacy in Indonesia cannot be accessed, so to determine the number of samples only with the minimum number of samples that must be met is determined. The number of samples is limited because this research data is only based on the number of returned questionnaires due to limited communication with pharmacists in the target provinces.

REFERENCES

- [1.] Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497–506.
- [2.] Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A Novel Coronavirus from Patients with Pneumonia in China, 2019. *N Engl J Med*. 2020;382(8):727–33.
- [3.] WHO. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020 [Internet]. 2020 [cited 2020 Jul 20]. Available from: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- [4.] MOORE PE. World Health Organization (WHO) Indonesia Situation Report. *Can Serv Med J*. 2020;11(3):121–6.
- [5.] Kemenkes-RI. COVID-19 [Internet]. Kemenkes. 2020. Available from: <https://infeksiemerging.kemkes.go.id/>
- [6.] Elbeddini A, Prabakaran T, Almasalkhi S, Tran C. Pharmacists and COVID-19. 2020;3:1–4.
- [7.] Menkes. Standar Pelayanan Kefarmasian di Apotek. 2016. Report No.: 73.
- [8.] Kemenkes-RI. Penanganan Pandemi Covid-19. 2020;19:32. Available from: <https://covid19.go.id/storage/app/media/Protokol/Protokol Percepatan Penanganan Pandemi Corona Virus Disease 2019.pdf>
- [9.] Sugiyono. Metode Penelitian Kuantitatif Kualitatif dan R&D. 20th ed. Bandung: Alfabeta; 2014.
- [10.] Kara E, Demirkan K, Ünal S. Knowledge and attitudes among hospital pharmacists about covid-19. *Turkish J Pharm Sci*. 2020;17(3):242–8.
- [11.] Enenche F, Saleh A, Owoicho S, Abraham N, Jauro S, Madukaji L, et al. Heliyon Knowledge , attitude , and practice among healthcare workers towards COVID-19 outbreak in Nigeria. *Heliyon*. 2020;6(November):e05557.
- [12.] Atkure Defar A, Molla G, Abdella S, Tessema M, Ahmed M, Tadele A, et al. Knowledge, Practice and associated factors towards the Prevention of COVID-19 among high-risk groups: A cross-sectional study in Addis Ababa, Ethiopia. *medRxiv*. 2020;2020.08.14.20172429.
- [13.] Cacodcar JA, Rataboli P V, Naik SS, Santos K Dos, Sanil M, Mardolker AA, et al. Assessment of knowledge , attitudes and practices regarding COVID-19 among pharmacists in Goa. 2020;7(12):5081–7.
- [14.] Alzoubi HM, Alnawaiseh N, Al-mnayyis AM, Aqel A. COVID-19 - Knowledge , Attitude and Practice among Medical and Non-Medical University Students in. 2020;(April).

- [15.] Zhang M, Zhou M, Tang F, Wang Y, Nie H, Zhang L, et al. Knowledge, attitude, and practice regarding COVID-19 among healthcare workers in Henan, China. *J Hosp Infect.* 2020;105(2):183–7.
- [16.] Muhammad K, Saqlain M, Hamdard A, Naveed M, Farooq Umer M, Khan S, et al. Knowledge, attitude, and practices of Community pharmacists about COVID-19: A cross-sectional survey in two provinces of Pakistan. *medRxiv.* 2020;(May):2020.05.22.20108290.
- [17.] Alahdal H, Basingab F, Alotaibi R. An analytical study on the awareness, attitude and practice during the COVID-19 pandemic in Riyadh, Saudi Arabia. *J Infect Public Health.* 2020;2.
- [18.] Saefi M, Fauzi A, Kristiana E, Adi WC, Muchson M, Setiawan ME, et al. Survey data of COVID-19-related knowledge, attitude, and practices among Indonesian undergraduate students. *Data Br.* 2020;31.
- [19.] Rahman A, Sathi NJ. Knowledge , Attitude , and Preventive Practices toward COVID-19 among Bangladeshi Internet Users. 2020;17(5).
- [20.] Mukattash TL, Farha RABU. Pharmacists ' perception of their role during COVID -19 : a qualitative content analysis of posts on Facebook pharmacy groups in Jordan. 2020;18(March):16–21.
- [21.] Hussain I, Majeed A, Saeed H, Hashmi FK, Imran I, Akbar M, et al. A national study to assess pharmacists ' preparedness against COVID-19 during its rapid rise period in Pakistan. 2020;2:1–10.
- [22.] Hamza MS, Badary OA, Elmazar MM. Cross - Sectional Study on Awareness and Knowledge of COVID - 19 Among Senior pharmacy Students. *J Community Health.* 2020;(0123456789):1–8.