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Effect of Hot Pack Administration on Shivering in Post Sectio Caesarea Patients with Spinal Anesthesia

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ABSTRACT

The impact that often arises after spinal anesthesia in post-cesarean section patients is shivering which is characterized by fasciculations of the skeletal muscles in the face, head, jaw, trunk or extremities that last more than 15 seconds. The incidence of post-anesthesia shivering in patients undergoing spinal anesthesia reaches 33-56.7%. Giving hot packs has been proven to be effective in treating hypothermia in post-cesarean section patients. Heat therapy using hot packs will restore body temperature quickly. This study aims to identify the effect of giving hot packs with shivering. The research design was pretest posttest control group design with 32 respondents, consisting of 16 treatment groups and 16 control groups taken by accidental sampling. This research was conducted in January 2020 in the High Care Unit Room, Aminah Islamic Hospital, Blitar. The results of this study showed that the administration of shivering scale hot packs in the treatment group decreased significantly to 0 while the control group experienced a less significant decrease in the shivering scale, namely to 1. Statistical test This study used Mann Whitney with a p-value of 0.000. This means that giving hot packs has an effect on shivering in post sectio caesarea patients with spinal anesthesia. Hot packs can be used asalternative therapy to reduce shivering in post sectio caesarea patients with spinal anesthesia.

Keywords: Hot pack, shivering, post sectio caesaria

Background

The use of spinal anesthesia techniques is still an option for patients with sectio caesarea compared to general anesthesia. The spinal anesthetic technique is the injection of an anesthetic agent into the intrathecal space, directly into the cerebrospinal fluid around the lumbar region below the L1/2 level where the spinal cord terminates(1). Spinal anesthesia lowers the trigger limit for vasoconstriction and shivering by about 0.60°C(2). So the impact that often appears after spinal anesthesia is shivering(3).

Shivering after anesthesia (post anesthesia shivering) is defined as a skeletal muscle fasciculation in the face, head, jaw, trunk or extremities that lasts more than 15 seconds(4). Post shivering anesthesia causes an increase in metabolic rate to more than 400%, and increases the intensity of pain in the wound area due to pulling of the surgical wound(5). In addition, it can also cause a significant increase in oxygen consumption (up to 400%), increase in CO2

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production (hypercarbia), increase arterial hypoxemia, lactic acidosis, and can cause heart rhythm disturbances.(6). Shivering also causes an increase in intracranial pressure, increased intraocular pressure and even most patients say that the experience of shivering they experience is far worse than pain in the surgical wound.

The incidence of post anesthesia shivering in patients undergoing spinal anesthesia reaches 33- 56.7%(7). In a study conducted by Fauzi, Rahimah and Yulianti at Karawang Hospital in 2014 the highest post anesthesia shivering was found in patients with sectio caesarea compared to other surgeries with a total of 26.31%. Preliminary studies conducted at RSI Aminah, sectio caesarea surgery under spinal anesthesia is the most surgical procedure with an average number of patients in January

November 2019 being 35 patients. In June 2019 data was obtained from 42 post-sectio caesarea patients, 33 patients experienced post anesthesia shivering. Management of post shivering anesthesia can be done with various techniques, both pharmacological and non-pharmacological. Pharmacological efforts carried out by administering drugs intravenously such as pethidine have not obtained satisfactory results because they still have various side effects such as nausea, vomiting, pruritus and patient respiratory depression. So it is necessary to support non-pharmacological interventions, namely by heating interventions. The effect of postoperative warming interventions raises body temperature and increases energy in the thermal compartment on the periphery of the body, one of which is a hot pack. A hot pack is a closed pack containing gel whose temperature is raised until it becomes hot or according to the patient's temperature resistance. The use of hot packs is more effective than other non-pharmacological techniques because there is no need to refill hot water when the temperature starts to drop. The hot pack also does not spill, causing burns to the patient.

Provision of hot packs has been shown to be effective against hypothermia in post sectio caesarea patients(8).Heat therapy using hot packs will restore body temperature quickly. The sensation and effect of heat are delivered through the skin and received by the dermal nerves, causing the dermal capillaries to dilate and widen and allow more blood to flow to the surface of the skin. Adequate blood flow and make the temperature around the skin surface increased.
The results of a preliminary study conducted at RSI Aminah Blitar to anticipate the impact of post anesthesia shivering have been carried out according to the SOP by administering pethidine in the operating room and providing blankets in the High Care Unit (HCU) room. However, with these actions, patients are still found to experience post anesthesia shivering. Based on the description above, the researcher is interested in conducting research with the title "The Effect of Hot Pack Administration on Shivering in Post Sectio Caesarea Patients with Spinal Anesthesia"

Methods

This research usesQuasy Experimentalwith pre test post test control group design. Samples were randomly selected and divided into two groups, namely the experimental group and the control group (Nursalam, 2017). This research was conducted at Aminah Islamic Hospital Blitar High Care Unit (HCU) on 6 - 31 January 2020. The population in this study were all post-sectio caesarea shivering patients with spinal anesthesia as many as 35 patients. The sampling technique used was accidental sampling carried out alternately, i.e., odd order samples for the treatment group and even order for the control group using the slovin formula so that a sample of 32 respondents was obtained (16 respondents in the control group and 16 respondents in the treatment group).Crossley and Mahajan(9)to determine the patient's shivering scale. The results of this study will be tested using Mann Whitney to find out

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significant differences in giving hot packs to shivering in post-cesarean section patients with spinal anesthesia.

Results

This research conducted in Aminah Islamic Hospital Blitar High Care Unit (HCU) with a sampleof 32 respondents.

1. Univarate Analysis
   Univariate analysis in this study can be seen from table 1 below:

This research conducted in Aminah Islamic Hospital Blitar High Care Unit (HCU) with a sampleof 32 respondents.

2. Univarate Analysis
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Table 1: Frequency distribution of the characteristics of the respondents

Characteristics	Control Group		Treatment Group	
	F	%	F	%
LILA (cm)				
3 years	16	100	16	100
BMI (Body Mass Index)				
18.5 - 24.9 (normal)	16	100	15	93.75
25 – 29.9 (over)	0	0	1	6,25
Variable				
Operating Time (minutes)				
>60	16	100	16	100

Based on the table above it can be seen that in the treatment group and the control group had the same measurement results, namely ≥23.5 cm as many as 16 (100%). In the category of BMI (BodyMass Index) it was found that in the treatment group 16 respondents (100%) had a BMI of 18.5 – 24.9 (normal). In the control group, 15 (93.75%) had BMI 81.5-24.9. Meanwhile, based on the duration of surgery, it was found that in the treatment and control groups, there were 16 (100%) operating times >60 minutes.

The relationship between knowledge about COVID-19 and the behavior of using Personal Protective Equipment (PPE) for frontline workers in the COVID-19 pandemic era in hospitals

Table 5 The relationship between knowledge about COVID-19 and the behavior of using PPE officers in the ED, Outpatient Installations, Radiology Installations, Laboratory Installations in Hospitals

Value of Knowledge about COVID-19	Behavior of Using PPE				Total	
	Using all PPE		Using not all PPE		N	%
	N	%	N	%		
Score 20	1	2,1	0	0	1	2,1
Score 18	1	2,1	1	2,1	2	4,3

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Score 17	0	0	5	10,6	5	10,6
Score 16	0	0	4	8,5	4	8,5
Score 15	1	2,1	12	25,5	13	27,7
Score 14	0	0	4	8,5	4	8,5
Score 13	6	12,8	7	14,8	13	27,7
Score 12	0	0	1	2,1	1	2,1
Score 10	1	2,1	3	6,3	4	8,5
Total	10	21,3	37	78,7	47	100
The average Score			14,4			
Highest Score			20			
Lowest Score			10			
P = 0,000 or P < 0,05						

The behavior of using PPE for frontline workers according to the knowledge of officers about COVID-19 is from 1 (2.1%) respondents with the highest score or correctly answering 20 questions about the knowledge of COVID-19 having the behavior of wearing all PPE surgical masks, long-sleeved gowns, face shield, headgear, shoes and gloves when in contact with patients. Whereas of the 4 (8.5%) respondents who had the lowest answer value, 1 (2.1%) respondents had the behavior of wearing all PPE and 3 (6.3%) of respondents had the behavior of not wearing all of the complete PPE.

According to the grouping of the respondents' knowledge values about COVID-19 related to the behavior of using PPE on frontline officers, they are: the value of good knowledge, out of 12 (25.5%) respondents there is 1 (8.3%) respondent wearing all PPE and 11 (91, 7%) of respondents did not use all PPE. In the moderate value group, there were 31 (65%) respondents with the behavior of using PPE, there were 7 (22.6%) respondents wearing all PPE and 24 (77.4) respondents not wearing all PPE. Whereas in the less value group where out of 4 (8.5%) respondents there was 1 (25%) respondent had the behavior of wearing all PPE and 3 (75%) respondents wearing not all PPE.

The results of the Person product moment correlation statistical test with a significance value of P = 0.000 or P < 0.05. Thus, it can be concluded that the knowledge of officers about COVID-19 has a correlation with the behavior of using PPE among frontline workers in the era of the COVID-19 pandemic.

The relationship between age and the behavior of using Personal Protective Equipment (PPE) for frontier workers in the era of the COVID-10 pandemic in hospitals

Table 6 The relationship between age and PPE usage behavior of officers in the emergency room, outpatient installation, radiology installation, laboratory installation at the hospital

Age (years)	Behavior of using PPE				Total		Correlation Test
	Using all PPE		Using not all PPE		N	%	
	N	%	N	%			
23 -28	2	22,2	6	15,7	8	17	

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29 – 34	2	22,2	17	44,7	19	40	P=0,208
35 – 40	1	11,1	2	5,3	3	6	or
41 – 46	2	22,2	5	13,2	7	15	P>0,05
47 - 52	1	11,1	6	15,7	7	15	
53 - 58	1	11,1	0	0	1	2	
59 - 64	0	0	2	5,3	2	4	
Total	**9**	**100**	**38**	**100**	**47**	**100**	

Based on the results of the research conducted, data were obtained for the youngest age group 23-28 years from 8 (17%) respondents, 2 (22.2%) respondents had the behavior of wearing all PPE surgical masks, long-sleeved gowns, face shields, headgear, shoes, gloves and 6 (15.7%) respondents wore PPE but did not fit level 2 PPE. Meanwhile, in the 59-64 year age group, 2 (5.3%) respondents did not wear all PPE. The results of the Person product moment correlation statistical test with a significance value of P = 0.208 or P > 0.05. Thus, it can be concluded that the age of officers has no correlation with the behavior of using PPE among frontline officers during the COVID-19 pandemic.

The relationship between tenure and the behavior of using Personal Protective Equipment (PPE) for frontline workers during the COVID-19 pandemic era in Hospitals

Table 7 The relationship between years of service and PPE usage behavior of officers in the emergency room, outpatient installation, radiology installation, laboratory installation at the hospital on 30 November - 11 December 2020

Work period (months)	**Behavior of using PPE**				**Total**	**Correlation Test**	
	Using all PPE		**Using not all PPE**		**N**	**%**	
	N	%	N	%			
8 -56	3	33,3	6	15,8	9	21,3	
57 – 105	1	11,1	6	15,8	7	14,9	P=0,387
106 - 154	1	11,1	4	21,3	11	23,4	or
155 - 203	0	0	3	6,4	3	6,4	P>0,05
204 – 252	1	11,1	5	13,2	6	12,8	
253 - 301	1	11,1	7	14,8	8	17	
302 - 350	2	22,2	1	2,6	3	4,3	
Total	**9**		**38**		**47**		

The behavior of using PPE according to the length of service carried out on frontline officers when in contact with patients, it was found that out of 9 (21.3%) respondents with at least years of service, 6 (15.8%) respondents wore not all PPE , and 3 (33.3%) respondents wore all PPE. Respondents with the longest working period out of 3 (4.3%) respondents, 2 (22.2%) respondents had the behavior of wearing all PPE surgical masks, long sleeve gowns, face shields, headgear, shoes and gloves while 1 (2, 6%) of respondents did not use all types of PPE, person product moment correlation statistical test with a significance value of P = 0.387 or P > 0.05. Thus, it can be concluded that staff tenure has no correlation with the behavior of using PPE among frontline officers during the COVID-19 pandemic.

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The relationship between the availability of PPE and the behavior of using Personal Protective Equipment (PPE) in frontline workers in the COVID-19 pandemic era in hospitals

Table 8. The relationship between the availability of PPE and the behavior of using PPE for officers in the emergency room, outpatient installation, radiology installation, laboratory installation at the hospital

No	Value of PPE availability	PPE usage behavior					
		Using all PPE		Using not all PPE		N	%
		N	%	N	%		
1.	Score 42	1	2,1	24	51,2	25	53,2
2.	Score 39	0	0	1	2,1	1	2,1
3.	Score 35	9	19,2	12	25,4	21	44,7
	Total 10	**21,3**	**37**	**78,7**	**47**	**100**	
	Average score of	38					
	Lowest score	35					
	Highest score	42					
	Person Product Moment Correlation Test					P = 0,000 or P = < 0,05	

According to the results of the study, the availability of PPE for frontline hospital workers was according to 25 (53.2%) respondents, the availability of PPE for officers with the highest scores or all types of PPE is available. Of these, 1 (2.1%) of respondents had the behavior of using all PPE or being disciplined in using PPE and 24 (51.2%) of respondents wore not all PPE. And of the 21 (44.7%) respondents who reported the availability of PPE with the lowest score, 9 (19.2%) of respondents wore all types of PPE and 12 (25.4%) of respondents wore not all PPE. All types of PPE that are available are always used by officers, the type of PPE that is rarely used by officers is gloves, on average officers wear gloves 13 times in 3 observations for 1 week but officers have diligently performed hand hygiene, both washing hands with soap antiseptic or hand sanitizer after patient contact, person product moment correlation statistical test with a significance value of P = 0.000 or P = < 0.05. Thus, it can be concluded that the availability of PPE has a correlation with the behavior of using PPE among frontline workers in the era of the COVID-19 pandemic.

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The relationship between knowledge about hospital policies regarding PPE for frontline officers and the behavior of using Personal Protective Equipment (PPE) for frontline workers in the COVID-19 pandemic era in hospitals

Table 9. The relationship between knowledge about hospital policies related to PPE and the behavior of PPE workers in the emergency room, outpatient installation, radiology installation, laboratory installation at the hospital

Value of knowledge of hospital policies related to PPE	PPE Usage Behavior				Total	
	Using all PPE		Using not all PPE		N	%
	N	%	N	%		
Score 8	1	2,1	1	2,1	2	4,3
Score 7	0	0	3	6,4	3	6,4
Score 6	8	17	23	48,9	31	65,9
Score 5	1	2,1	8	17	9	19,1
Score 4	0	0	2	4,3	2	4,3
Total 10	**21,3**	**37**		**78,7**	**47**	**100**
Average score of	5,9					
Highest score	8					
Lowest score	4					
Person Product Moment Correlation Test	P = 0,000 or P < 0,05					

The behavior of using PPE for frontline officers is in accordance with the knowledge of officers about hospital policies related to PPE from 2 (4.3%) respondents who had the highest correct answer value 1 (2.1%) respondents had the behavior of wearing all PPE masks, long sleeve dresses, face masks shield, headgear, shoes and gloves. Respondents with the lowest scores in the questionnaire about hospital policies related to PPE 2 (4.3%) of respondents had the behavior of not wearing all PPE completely. Grouping of respondents' knowledge values about hospital policies related to PPE related to the behavior of using PPE on frontline officers, they are: the value of good knowledge from 5 (10.6%) respondents, 1 (20%) respondent uses all PPE and 4 (80%) respondents wear not all PPE. In the sufficient value group, there were 40 (85.1%) respondents with the behavior of using PPE, there were 8 (20%) respondents wearing all PPE and 32 (80%) respondents not wearing all PPE. Whereas in the less value group where out of 2 (4.3%) respondents all had the behavior of not wearing all PPE. Person product moment correlation statistical test with a significance value of P = 0.000 or P < 0.05. Thus, it can be concluded that the knowledge of officers about hospital policies related to PPE has a correlation with the behavior of using PPE among frontline workers in the era of the COVID-19 pandemic.

Discussion

The relationship between knowledge about COVID-19 and the behavior of using Personal Protective Equipment (PPE) among hospital frontliners during the COVID-19 pandemic

In this study, according to the results of the correlation test between knowledge about COVID-19 and the behavior of using PPE, a significance value of P = 0.000 or P < 0.05 can be concluded, which can be concluded that there is a relationship between the knowledge of frontline workers about COVID-19 and the behavior of using PPE. This study shows that

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officers with the highest number of correct answers in answering the questionnaire about COVID-19 1 (2.1%) have the behavior of wearing all PPE, namely surgical masks, headgear, face shields, long-sleeved gowns, shoes and gloves when in contact. with patients. Meanwhile, the officer with the lowest answer, 4 (8.5%), had the behavior of not wearing all types of PPE. It is appropriate that the factors that influence the formation of behavior are divided into 2, namely internal and external factors. Internal factors include knowledge, intelligence, perception, emotion, motivation which functions to process external stimuli (8). The higher a nurse's knowledge about PPE, the higher the level of compliance with using PPE (7).

Knowledge is the result of 'knowing' and this occurs after people perceive a particular object. Knowledge or cognitive is a very important domain for the formation of one's actions (ovent behavior). From experience and research it turns out that behavior based on knowledge will be more lasting than behavior that is not based on knowledge. One of the internal factors that influence knowledge is education (8). Likewise, frontline officers who have the most recent education are D3, namely 17 (36.2%) of respondents. It is very easy to get information about COVID-19, especially now that technological progress is very fast. Education can affect a person, including one's behavior towards lifestyle, especially in motivating attitudes to participate in development (9). In general, the higher a person's education, the easier it is to receive information (8). knowledge about COVID-19 very important because the Corona virus is transmitted. Based on current epidemiological and virological studies, it is proven that COVID-19 is mainly transmitted from symptomatic people to other people who are at close range via droplets. Droplets are water-filled particles with a diameter >5-10 µm. Droplet transmission occurs when a person is at close range (within 1 meter) to someone who has respiratory symptoms (for example, coughing or sneezing) so that the droplets are at risk of hitting the mucosa (mouth and nose) or conjunctiva (eyes) (10). By understanding how it is transmitted, it is hoped that frontline officers will understand what PPE should be used when in contact with patients. In addition, knowledge and skills regarding the use and especially of removing PPE are also important for frontline officers to understand. Improper use of PPE, such as wearing gloves can be detrimental to yourself and others because it can be a means of transferring disease germs to other patients or even to fellow staff. Likewise, improper release of PPE has a big risk of becoming a means of transmission of COVID-19. Even though they have good knowledge about COVID-19, socialization and training on using and disposing of PPE for the prevention and control of COVID-19 are still being provided because COVID-19 is a new disease whose management is always developing so it is hoped that frontline workers will be able to carry out prevention and tackling COVID-19 by preventing contracting and transmitting COVID-19 to himself and others l

The relationship between age and the behavior of using Personal Protective Equipment (PPE) in hospital frontline workers in the era of the COVID-19 pandemic

According to the results of the correlation test between age and the behavior of using PPE, a significance value of P = 0.208 or P > 0.05 can be concluded that there is no relationship between the age of frontline officers and the behavior of using PPE. In this study, all respondents had the behavior of wearing PPE with a score of 114 (90.4%) when in contact with patients. The more mature, the level of maturity and strength of a person will be more mature in thinking and working. Whereas before adopting a new behavior within a person a sequential process occurs, namely: awareness, interest, evaluation, trial and adaptation(8).The adoption of behavior that is in accordance with the process and is based on knowledge, positive awareness, the behavior will be lasting, and vice versa (9).

According to respondents, they realized that tackling the COVID-19 pandemic was a

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shared responsibility, so they had awareness and really prepared themselves to become frontline officers who were brave, tough and not easily discouraged. The frightening pandemic situation affects human behavior, including frontline hospital staff in preparing themselves for handling COVID-19. It is appropriate that behavior is what the organism does, whether it can be observed directly or indirectly. Behavior and behavioral symptoms that appear in the activities of these organisms are influenced by genetic and environmental factors. The environment is a condition or a land for the development of this behavior (8). The ongoing COVID-19 pandemic demands adjustments and adaptations in all respects from all people in the world, including health workers, especially those who have to deal with patients infected with COVID-19. Officers must adapt to wearing PPE even though it makes them uncomfortable in their activities, some respondents said they felt hot and hot. For staff at the forefront of the Hospital, due to limited manpower it is impossible for the Hospital to place only officers with a young age to be at the forefront, even though the separation of officers with comorbid illnesses has been carried out to be placed in parts far from the risk of transmission of COVID-19. Hospitals have done many things to provide protection for frontline workers in the face of the COVID-19 pandemic, in addition to carrying out good supervision of the behavior of officers in using PPE, they also always remind them to be disciplined in implementing other health protocols wherever they are, including diligently washing hands and keeping their distance, remembering that officers must make direct contact with patients who are not yet known whether they have symptoms of COVID-19 or not which makes the risk of contracting COVID-19 higher.

The relationship between tenure and the behavior of using Personal Protective Equipment (PPE) for frontline hospital staff in the era of the COVID-19 pandemic

The results of the correlation test between years of service and PPE usage behavior, a significance value of $P = 0.387$ or $P > 0.05$ can be concluded, which can be concluded that there is no relationship between tenure of vanguard officers and PPE use behavior. This can be seen by officers with a working period of 8 – 56 months or 302 – 350 months having the same behavior in using PPE where some wear it incomplete and some wear it completely including surgical masks, long sleeve gowns, headgear, face shields, shoes , gloves. Even though all frontline officers in providing services when in contact with patients must use standard PPE as an effort to prevent and control COVID-19. This is not in line with research which suggests that a long working period can affect the work motivation of nurses in using PPE(7). Nurse's tenure will affect her adherence to using PPE (6). Work period is the time calculated to start working after a 3-month contract period can be calculated in months or years. Work period greatly affects a person's experience of work and the environment. This experience will be able to make someone to work even better. Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a new type of coronavirus that has never been previously identified in humans (2). So it is certain that all health workers have no experience working in the midst of this deadly pandemic. Not a few health workers experience fear and confusion because they have to get used to new behavior, especially in using PPE which is expected to protect workers from COVID-19 infection.

Dissemination of prevention and control of COVID-19 is needed according to the latest developments as well as the correct and safe way to use and remove PPE for frontline officers to support the adoption of new behaviors in officers. Moreover, during the COVID-19 pandemic it was often known that patients were dishonest with their health information, patients covered up to answer by lying to officers' questions causing the risk of infection with COVID-19 for officers to be higher.

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The relationship between the availability of PPE and the behavior of using Personal Protective Equipment (PPE) for frontline hospital workers in the era of the COVID-19 pandemic

Research results of the correlation test between the availability of PPE and the behavior of using PPE, a significance value of P = 0.000 or P < 0.05 can be concluded, which can be concluded that there is a relationship between the availability of PPE and the behavior of using PPE on officers. The results of the study show that the availability of PPE for frontline officers is all available. COVID-19 is a disease with a fairly high transmission rate, so it is necessary to carry out comprehensive public health protection efforts. WHO 2020 guidelines, strategies to optimize the availability of PPE in hospitals can be carried out by minimizing the need for PPE, using PPE rationally and appropriately and coordinating PPE supply chain management mechanisms. In accordance with WHO recommendations, 2020 as an effort to consider actions when supplies of PPE are limited such as extended use of PPE, reprocessing and reuse after decontamination / sterilization and consideration of using alternative tools recommended by WHO standards (1). Although the use of PPE is the most visible control measure in preventing the spread of infection, the use of PPE is only one measure of IPC and cannot be relied upon as a primary prevention strategy. Without effective administrative and mechanical controls, the benefits of PPE are limited (6).

Likewise with the availability of PPE in hospitals, hospitals always try to provide the best possible PPE, especially for officers who in their duties have to be in contact with COVID-19 patients. As a private hospital, all the availability of facilities and infrastructure is self-sufficient, so a gradual completion process is needed. The hospital mobilized all human resources in dealing with the COVID-19 pandemic storm, including sewing room staff to design and manufacture work clothes, long-sleeved gowns and headgear that can be distributed quickly to officers, especially those on the front lines. Due to the scarcity of PPE, the COVID-19 pandemic has truly had an extraordinary impact on various fronts, not only on health issues but also on the economy. Reprocessing and reuse of PPE such as long-sleeved gowns, headgear, face shields, protective shoes and particulate or N95 masks used in PPE level 3 are also carried out in hospitals. In addition to fulfilling PPE as needed, the hospital also carries out administrative and mechanical controls such as installing barriers on officers' desks, placing distancing signs on waiting chairs, prohibiting visiting hours, organizing PPE logistics so supplies are used properly and making policies regarding health and protection of officers.

The role of the PPI Committee in infection prevention and control in hospitals is very important, especially when the world is faced with this extraordinary COVID-19 pandemic. Supervision must be carried out not only in the use of PPE but also with the availability of PPE in each work unit according to the infection zoning by utilizing the PPI Committee network, namely IPCLN as a form of coordination for the PPE supply chain management mechanism. In addition, the preparation of procedures for providing facilities and infrastructure related to PPI is needed as a form of administrative control that can support and enhance hospital efforts in carrying out efforts to prevent and control COVID-19. Tough and great health workers are one of the hospital's extraordinary assets so that the protection of frontline health workers and other health workers who treat COVID-19 patients must be prioritized, hopefully this COVID-19 pandemic will end quickly.

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The relationship between knowledge about hospital policies regarding PPE for frontline officers and the behavior of using Personal Protective Equipment (PPE) for Hospital frontline workers in the era of the COVID-19 pandemic

This research results of the correlation test between knowledge of hospital policies related to PPE and the behavior of using PPE, a significance value of P = 0.000 or P < 0.05 can be concluded, which can be concluded that there is a relationship between the knowledge of frontline officers about hospital policies related to PPE and the behavior of using PPE in officer. The policy in this study is a written statement made by the leadership/management of the Hospital regarding the use of PPE by officers when providing services. This policy through the Hospital Infection Prevention and Control Committee and the COVID-19 Health Service Team is socialized to all staff at the Hospital to be known and understood so that it is expected to increase the behavior of using PPE among officers. In this study as many as 2 (4.3%) respondents who understood and understood hospital policies and regulations by answering all 8 questions correctly had the behavior of wearing all types of PPE, while 2 (4.3%) respondents with the lowest number of correct answers were 4 about having the behavior of wearing not all PPE completely. Before someone is able to apply the material being studied in actual conditions, that person knows and understands the object that is known correctly (9). This is in accordance with research conducted on nurses at the District Hospital.

Even though frontline officers understand and understand hospital policies and regulations, supervision and supervision of the behavior of officers in using PPE must still be carried out. Policy is a driving or reinforcing factor for the occurrence of a behavior. The existence of a policy can be a factor for someone to comply and be disciplined in using PPE while on duty. COVID-19 is a new disease which in its prevention and control is always progressing so that new policies from the government often emerge, including guidelines for handling COVID-19 which are frequently revised. For this reason, it is necessary to review existing hospital policies or even revise them according to the development of the situation and conditions.

Conclusions and Recommendations

There is a relationship between the knowledge of officers about COVID-19, the availability of PPE and the knowledge of officers about hospital policies regarding PPE with the behavior of using PPE for frontline workers in the era of the COVID-19 pandemic in hospitals. Meanwhile, the age and tenure of officers had no relationship with the behavior of PPE use for frontline officers during the COVID-19 pandemic era in hospitals.

Recommendations for hospital to supervise and monitor the use and availability of PPE in each installation according to the infection zone, with good supervision it can improve the behavior of using PPE and increase enthusiasm in providing health services, carry out continuous socialization about the COVID-19 pandemic according to the latest developments in order to increase the understanding of officers, in the prevention and control of COVID-19, formulate hospital policies regarding the provision of facilities, infrastructure for officers for COVID-19 service activities.

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