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Maturity Level of Patient Safety Culture in Makassar City Hospital

Tingkat Maturitas Budaya Keselamatan Pasien di Rumah Sakit Kota Makassar

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ABSTRACT

The maturity of a patient safety culture is a step in developing a hospital patient safety culture. This research aims to determine the maturity level of patient safety culture in Makassar City hospitals. Furthermore, it is a quantitative study with a cross-sectional approach and was carried out at Public and Private Hospitals with the 2012 KARS Plenary level accreditation status in 2020. The purposive sampling method was used for the selection of the study locations and the selected hospital was the RSUD Haji Makassar, Hasanuddin University Hospital Makassar (belonging to the Ministry of Education and Culture), and Awal Bros Makassar Hospital (privately owned). The determination of the sample size was adjusted to the total number of employees of the hospital in which the research was performed, namely about 474 samples. The data collection tool contains a patient safety culture questionnaire based on the MaPSaF (Manchester Patient Safety Framework) instrument containing 5 levels of patient safety culture. The results showed that the maturity level of the patient safety culture in Makassar City hospital, the generative category was the largest choice, namely 391 respondents (82.5%) and the least in the reactive category was 1 respondent (0.2%). The three hospitals have maturity levels of patient safety in the generative category. It is hoped that the Makassar City hospital will be able to maintain the maturity of patient safety culture by paying attention to teamwork and responsibility by implementing a patient safety culture.

ABSTRAK

Maturitas atau kematangan budaya keselamatan pasien merupakan tahap perkembangan budaya keselamatan pasien di rumah sakit. Tujuan penelitian ini adalah untuk mengetahui tingkat maturitas budaya keselamatan pasien di rumah sakit Kota Makassar. Jenis penelitian ini adalah penelitian kuantitatif dengan pendekatan secara cross sectional. Penelitian dilaksanakan di Rumah Sakit Pemerintah dan Swasta dengan status akreditasi tingkat Paripurna KARS 2012 di Kota Makassar pada tahun 2020. Pemilihan lokasi penelitian menggunakan purposive sampling dan rumah sakit yang terpilih adalah RSUD Haji Makassar, Rumah Sakit Universitas Hasanuddin Makassar (milik Kemendikbud), dan Rumah Sakit Awal Bros Makassar (milik swasta). Penentuan besar sampel disesuaikan dengan jumlah total karyawan pada rumah sakit yang menjadi lokasi penelitian yaitu sebanyak 474 sampel. Alat pengumpulan data menggunakan kuesioner budaya keselamatan pasien berdasarkan instrumen MaPSaF (Manchester Patient Safety Framework) yang terdapat 5 tingkatan budaya keselamatan pasien. Hasil penelitian menunjukkan bahwa tingkat maturitas budaya keselamatan pasien di rumah sakit Kota Makassar, kategori generatif menjadi pilihan terbanyak yaitu 391 responden (82,5%) dan yang paling sedikit pada kategori reaktif sebanyak 1 responden (0,2%). Ketiga rumah sakit yang menjadi tempat penelitian, memiliki tingkat maturitas keselamatan pasien yang berada pada kategori generatif. Diharapkan rumah sakit Kota Makassar mampu mempertahankan maturitas budaya keselamatan pasien dengan memperhatikan kerjasama tim dan tanggung jawab.

INTRODUCTION

Patient safety is one of the critical issues in hospitals that are always published and is becoming a national and international focus.¹ In addition, it is becoming a critical issue due to many medical errors that occur in many countries.²

Patients in Europe have an infection risk of 83.5%, which is evidenced by medical errors of 50-72.3%. Based on data collected from hospitals in different countries, it was reported that Adverse Events (AE) range from 3.2 to 16.6%. Patient Safety data on Near Miss (NM) and Adverse Events (AE) in Indonesia are rare, there is an increase in allegations of misconduct, which are not necessarily in accordance with the final evidence. The incidence of patient safety violations was 28.3% and it was committed by nurses. Based on the XII PERSI (The Indonesian Hospital Association) Congress (2012), the data on the incidence of falling patients was 14%, and to ensure patient safety, the incidence of falling patients should be 0%.³

To reduce the incidence of medical errors or Adverse Events (AE) related to patient safety issues, hospital management must establish a patient safety culture.¹ Patient safety is influenced by how the individual culture and systems run in the organization. Therefore, a personal/individual approach, as well as the management system, must be implemented within the organization. The safety culture in various industries is developing very rapidly. The rate of accidents in the working environment has decreased because it is supported by an awareness of the importance of safety value in the organization. However, in medical practice, patient safety programs are only promoted widely after external coercion.⁴

Efforts to implementing patient safety begin with the application of a patient safety culture.⁵ By laying an emphasis, the result will be a better application of patient safety than just focusing on the programs.⁶ The Institute of Medicine (IOM) recommends developing patient safety, which refers to patient safety culture to predict health opportunities by conducting analysis or surveys by measuring its maturity level in

hospitals.⁷ Maturity of patient safety culture is a developmental stage in patient safety culture.⁸

Based on MaPSaF (Manchester Patient Safety Framework) in the research by Ebrahimzadeh et al there are 5 levels of patient safety culture, namely pathological, reactive, bureaucratic, proactive, and generative.⁹ Furthermore, pathological means that there is no system for the development of a patient safety culture. Reactive means that the system is still fragmented and developed as part of a regulation or accreditation request in response to an incident. Bureaucratic means that there is a systematic approach to patient safety, but its implementation is always divided and incident analysis is always limited to the situation in which the incident occurred. Proactive means that there is a comprehensive approach to patient safety culture, evidence-based interventions have been implemented. While generative means that the formation and maintenance of the patient safety culture is a central part of the organization's mission, the effectiveness of interventions is always evaluated, always learns from error and successful experiences, and takes important actions to improve the situation.

Previous research showed that the maturity level of patient safety culture at PKU Muhammadiyah Yogyakarta Hospital as a whole is at a proactive level (80%).¹ While in the study of Liana et al, it is known that the maturity of the patient safety culture in the UK is at a proactive level. The research used was a systematic literature review of 5 databases: PubMed, EBSCO, Proquest, Science Direct, and Scopus.¹⁰ As for another study using the MapSaf instrument conducted by Xiao Ping et al, it is known that the hospital patient safety culture in China is largely bureaucratic.¹¹

Due to the lack of research comparing three hospitals at once, which is not based on a systematic literature review, then by considering this and the importance of patient safety culture in hospitals as described, researchers are interested in conducting research on the maturity level of patient safety culture in hospitals Makassar city.

MATERIAL AND METHOD

This is quantitative research with a cross-sectional approach and was conducted at public and private hospitals with the accreditation status KARS (Hospital Accreditation Commission) 2012 in the plenary of the city of Makassar in 2020. Furthermore, purposive sampling was used for the selection of study locations, namely the selection of 1 hospital each owned by the provincial government, the Ministry of Education and Culture (Kemendikbud), and private hospitals. The hospitals selected were the Haji Hospital (RSUD) Makassar, Hasanuddin University Hospital Makassar (owned by the Ministry of Education and Culture), and Awal Bros Hospital Makassar (private).

The sample size determination was adjusted based on the total number of hospital staff in the research location. The target group was medical personnel, paramedics, and medical support at the hospital (doctors, nurses, pharmacists). A total of 474 samples were taken with a proportional random sampling method. The data were obtained using a patient safety culture questionnaire based on the MaPSaF instrument, which contains 5 levels of patient safety culture. The assessment of questionnaires uses Likert scale (1-4) to determine maturity level, where 1 is reactive, 2 is bureaucratic, 3 is proactive, and 4 is generative. The analysis used is descriptive statistical analysis, which is a method of analyzing data by describing the data that has been collected. Data processing includes the process of data reduction, data display, data transformation, data linking, data consolidation, data comparison, and data integration. The data were presented using a frequency distribution table accompanied by a narrative interpretation of the results table. The research protocol for the study was approved by the Ethics Committee, Faculty of Public Health, Universitas Hasanuddin, Indonesia with number 7396/UN4.14.1/TP.01.02/2021.

RESULTS

Based on the age group, the results showed that the highest proportion was between 26-34 years old with 314 respondents (66.2%), and the least was in the 18-25 years old with 12 respondents (2.5%). Based on gender, the majority

of the respondents were women, namely 369 respondents (77.8%). The most recent education of respondents was a professional education for about 192 respondents (40.5%) and the least was Senior High School/equivalent for about 3 respondents (0.4%). The majority of respondents were civil servants/permanent workers for about 268 respondents (60.3%) and the least 182 respondents (35.4%) were non-civil servants/non-permanent workers. Most of the respondents' working period was four years for about 240 respondents (50.6%) (Table 1).

Based on the maturity level of patient safety culture in Makassar City hospital, the generative category was the largest choice for about 391 respondents (82.5%), and the least was in the reactive category with 1 respondent (0.2%). The three hospitals had maturity levels of patient safety in the generative category (Table 2).

DISCUSSION

Patient safety is an indicator that describes high-quality health services. In the context of the health care system, it includes efforts to prevent errors, learn from errors that occur, and build a safety culture that encompasses all components of the hospital and the patient. Therefore, building a patient safety culture is also part of the efforts to build organizational culture.¹²

The patient safety culture in Makassar City hospitals (Awal Bros, Unhas, and Haji Hospital) is included in the generative category. This is in line with the research by Law et al. that a generative culture is considered as the highest level of safety. Furthermore, safety management is an integral part of everything humans do, and a proactive culture is considered as a culture vigilant attitude of always thinking about patient safety issues.¹³

Research by Jabonete, et al showed significant differences in the perceptions of safety culture at the generative level.¹⁴ As for another study using the MapSaf instrument which is inversely proportional to this study, conducted by Xiao Ping et al, it is known that the patient safety culture of hospitals in China is largely bureaucratic.¹¹ Work positions in general affect nurses perceptions of their safety culture. In addition, this is dominant for nurses handling managerial positions rather than the front-line nurses. Then, it is known that the team

cohesiveness described among the members of the health care team is different even though they work in the same unit.¹⁴

At the generative level, the hospital even motivates the officers to complete their training according to the needs and allocated resources for training the officers. Marquis and Haston stated

that staff development programs through training and education are effective to increase nurses' productivity.¹⁵ Adequate support in the form of professional training and knowledge development is an effort to create a positive work environment for nurses, and therefore safe care can be achieved.¹⁶

Table 1. Characteristics of Respondents

Characteristics	Hospital					
	Awal Bros		Unhas		Haji	
	n = 192	%	n = 179	%	n = 103	%
Age (Years)						
18-25	3	1,60	6	3,4	3	2,9
26-34	127	66,10	163	91,1	24	23,3
35-50	56	29,2	10	5,6	68	66,0
> 50	6	3,1	0	0,0	8	7,8
Gender						
Male	43	22,4	48	26,8	14	13,6
Female	149	77,6	131	73,2	89	86,4
Education						
Senior High School/Equivalent	1	0,5	1	0,6	0	0,0
Diploma/Equivalent	64	33,3	27	15,1	29	28,2
Bachelor	34	17,7	47	26,3	35	34,0
Professional Education	72	37,5	88	49,2	32	31,1
Master	7	3,6	15	8,4	5	4,9
Specialist 1	9	4,7	0	0,0	2	1,9
Specialist 2	3	1,6	0	0,0	0	0,0
Doctor (S3)	2	1,0	1	0,6	0	0,0
Working Period (Years)						
One	4	2,1	22	12,3	8	7,8
Two	28	14,6	96	53,6	20	19,4
Three	36	18,8	9	5,0	10	9,7
Four	124	64,6	52	29,1	64	62,1
Nine	0	0,0	0	0,0	1	1,0
Occupational status						
Civil Servant or Permanent Worker	167	87,0	30	16,8	89	86,4
Non Civil Servant or Non-Permanent Worker	24	12,5	145	81,0	13	12,6
Interns/Volunteers	0	0,0	4	2,2	1	1,0
Other	1	0,5	0	0,0	0	0,0

Source: Primary Data, 2020

Table 2. Distribution of Maturity Levels of Patient Safety Culture in Makassar City Hospital

Maturity Level	Hospital							
	Awal Bros		Unhas		Haji		Total	
	n = 192	%	n = 179	%	n = 103	%	n = 474	%
Reactive	0	0,0	0	0,0	1	1,0	1	0,2
Bureaucratic	0	0,0	3	1,7	4	3,9	7	1,5
Proactive	13	6,8	35	19,6	27	26,2	75	15,8
Generative	179	93,2	141	78,8	71	68,9	391	82,5

Source: Primary Data, 2020

Every staff wants to provide the best and safest way for patients according to the program implemented in the hospital.¹⁷ Therefore, patient safety is actively promoted throughout the organization, staff/employees are involved in all safety issues and processes. Furthermore, it can not be denied that the patient and family are involved in the risk management system, and the actions taken are for the protection of the patient and not self-protection. The risk management is determined based on a risk assessment and the corresponding measures taken, as well as the manager's role in risk management.¹⁸

Some of the respondents who chose reactive only from RSUD Haji. While the bureaucrats from the Unhas Hospital and Awal Bros Hospital with a total of seven respondents. The second choice is the most with a proactive maturity level with a total of 75 respondents from each hospital studied. This is in line with the results of research from Astika, et al, which showed that the results were not in line with this study because the patient safety culture at PKU Muhammadiyah Yogyakarta Hospital as a whole was at a proactive level (80%).¹ Likewise, the research conducted at AM Parikesit Tenggarong Hospital is at the proactive level. Generally, in this maturity level of patient safety culture, a comprehensive approach and evidence-based interventions have been implemented. Several factors have also been identified to support the development of the patient safety culture. The keys include leaders/managers, direct supervisors, individual behavioral factors, reporting systems, rules, and procedures, as well as the subculture of the health care organization.³

The culture application in an organization cannot be separated from the active role of the superior, in this case, the supervisor or manager, in promoting accepted values by taking related actions that can support the process of establishing the desired values.¹⁹

The implication of this study is that the patient safety culture in each hospital can be different, and to measure the patient safety culture, several instruments can be used, one of which is MapSaf (Manchester Patient Safety Framework). The limitation of this research is the limited research time. It is hoped that further research will be able to use newer data analysis and the dimensional variables of the maturity

level of patient safety culture are studied more broadly.

CONCLUSION AND RECOMMENDATION

The patient safety culture in Makassar City hospitals (Awal Bros, Unhas, and Haji) is included in the generative category. Furthermore, its formation and maintenance in the hospital is a central part of the organization's mission. The effectiveness of interventions is always evaluated, and always learning from error or successful experience, as well as taking meaningful actions to correct the situation. In addition, it is expected that the Makassar City hospital will be able to maintain the maturity of the patient safety culture by paying attention to teamwork and responsibility in implementing the culture.

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Rapid Assessment of Personnel and Equipment Availability in Sports Medicine Services

Penilaian Cepat Ketersediaan Tenaga dan Peralatan pada Layanan Kedokteran Olahraga

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ABSTRACT

Hospitals that already have sports medicine services need to constantly make improvements and innovations to ensure the implementation of complete services. This study aims to explain the description of the availability of personnel and equipment at a hospital in Jakarta and the extent of their suitability based on literature studies in order to support sports medicine services. This research method is descriptive qualitative with triangulation methods, namely observation, in-depth interviews with 4 key informants, review of hospital documents, and is equipped with a literature study to match the personnel and equipment available with those found in the literature study. This research is located at a hospital in Jakarta, which runs from November 3, 2020 to December 1, 2020. The results show that the hospital has sufficiently complete personnel and only needs to complete the availability of sports psychologists. Meanwhile, nutritionists and dentists can ask for the willingness of the staff in the hospital to join as a sports medicine team. For podiatrists and health education providers, their role can be carried out by other personnel in the field of sports medicine who have similar competencies. The equipment owned by that hospital is also quite complete, but it should be equipped with MRI, as well as tools that have become gold standards, including CPET and DXA Scan. The fulfillment of these personnel and equipment should be a development plan for sports medicine services in stages in the future.

ABSTRAK

Rumah sakit yang telah memiliki layanan kedokteran olahraga perlu senantiasa melakukan perbaikan dan inovasi guna menjamin terselenggaranya pelayanan paripurna. Penelitian ini bertujuan menjelaskan gambaran ketersediaan tenaga dan peralatan di salah satu rumah sakit di Jakarta dan kesesuaiannya berdasarkan studi pustaka dalam rangka menunjang pelayanan kedokteran olahraga (sports medicine). Metode penelitian ini adalah deskriptif kualitatif dengan triangulasi metode yaitu observasi, wawancara mendalam dengan 4 informan kunci, telaah dokumen rumah sakit, dan dilengkapi dengan penelusuran studi pustaka untuk mencocokkan antara tenaga dan peralatan yang tersedia di rumah sakit tersebut dengan yang ditemukan pada studi pustaka. Penelitian ini berlokasi di sebuah rumah sakit di Jakarta yang berlangsung sejak 3 November 2020 sampai dengan 1 Desember 2020. Hasil penelitian menunjukkan bahwa rumah sakit telah memiliki tenaga yang cukup lengkap dan hanya perlu melengkapi ketersediaan dari tenaga psikolog olahraga. Sedangkan tenaga nutrisi dan tenaga dokter gigi dapat meminta kesediaan dari tenaga yang terdapat di rumah sakit tersebut untuk bergabung sebagai tim kedokteran olahraga. Sementara itu, untuk tenaga ahli penyakit kaki dan tenaga pemberi edukasi kesehatan perannya dapat dilakukan oleh tenaga lain di bidang kedokteran olahraga yang memiliki kompetensi serupa. Peralatan yang dimiliki juga sudah cukup lengkap, namun sebaiknya perlu dilengkapi dengan MRI, serta alat yang menjadi gold standar, diantaranya CPET dan DXA Scan. Pemenuhan dari tenaga dan peralatan tersebut hendaknya menjadi rencana pengembangan layanan kedokteran olahraga (sports medicine) secara bertahap ke depannya.

INTRODUCTION

Sports medicine is a branch of medical field that deals with injuries and diseases that occur due to sports, injury recovery efforts, including preventing the occurrence of more serious sports-related health problems, both physically and emotionally, which are not only limited to medical procedures such as surgery and treatment, as well as efforts to improve the performance of an athlete.¹ Development of sports medicine services that have undergone a change from services aimed only at elite, professional, or Olympic competitive athletes,² then now it is a service aimed at anyone who wants to do sports and improve their fitness and performance, opening up great opportunities for hospitals to be able to develop their services in the field of sports medicine.

Hospitals that want to expand their services in the field of sports medicine need to prepare themselves by providing all the resources needed, one of which is the personnel who will provide sports medicine services and also the equipment. Meanwhile, hospitals that have previously developed their services in the field of sports medicine also need to continue to make improvements to ensure the implementation of complete services and always innovate amid the increasingly complex demands of patients for the quality of hospital services, as well as increasingly tight competition in hospitals.

This is as is being done by a hospital in Jakarta which has been providing sports medicine services since 2014 and increasingly focused on developing this service as one of its centers of excellence services. This hospital also stated its commitment to always provide professional staff and equipment to support services in accordance with the needs of sports medicine services.

On the other hand, there are matters that have been determined based on literature studies related to manpower and equipment that need to be equipped in order to provide quality sports medicine services. In a previous study, Paramita and Ayuningtyas, mapped the concept of sports medicine services in hospitals with the scoping review method, including those related to personnel and equipment. The study stated that the personnel involved were doctors from various specialties as well as professions from various disciplines in the field of sports medicine. While

some of the equipment used includes ultrasound, sensor-based physical examination support, rehabilitation equipment, and arthroscopy.³ Previous research is unfortunately still limited to a literature study and has not seen how the conditions are directly encountered in hospitals, so they have not been able to see their conformity with those found in the literature study.

Therefore, this study aims to describe the availability of personnel and equipment at that hospital and the suitability of these personnel and equipment based on literature studies in support of sports medicine services.

MATERIAL AND METHOD

This research is a qualitative descriptive study using triangulation methods, by observing direct participation various personnel who provide services and equipment provided by the hospital to provide sports medicine services for 1 month, to be exact 2 times a week (every Tuesday and Wednesday) for 6-7 hours. Then followed by conducting in-depth interviews with the General Clinic Manager, and Team Leader, as well as 2 Coordinators (nurse coordinator and physiotherapists coordinator) as key informants. The selection of informants was based on the researcher's observations that they are the most involved and responsible people to ensure the good running of sports medicine services, who regulates every task and responsibility of other human resources, and best knows the information needed related to the services that have been provided so far.

In addition, the research was also followed by a review of hospital documents related to the implementation of sports masking services, such as service manual documents, standard operating procedures, and details of the clinical authority of each profession that provides sports medicine services.

To complement the research, the researcher also carried out a literature study search and then matched various things about the availability of personnel and equipment found with various things found in the literature study. This research is located at one of the hospitals in Jakarta, which took place from 3 November 2020 to 1 December 2020 by prioritizing the principles of research ethics through approval after

explanation, and respecting the privacy and confidentiality of all data and the identity of the informant and the hospital where the research was conducted.

RESULTS

This hospital is a general hospital located in Jakarta and has started providing sports medicine services since 2014 and has become a sports medicine service as one of its center of excellence services with a focus on comprehensive health management of athletes and sports injuries, as well as support athletes and sports actors to return to their sporting activities, more specifically to the sport by increasing their performance and at the same time improving the quality of life with a healthy lifestyle.

Personnel Availability

Currently, sports medicine services are carried out by a sports medicine team consisting of 1 sports medicine specialist, 4 sports medicine consultant orthopedic surgeons, 3 nurses, and 6 sports physiotherapists. Apart from the team, this service is also assisted by 2 secretaries, 1 pharmacy staff, 6 administrative and cashier staff, and 2 cleaning services staff.

Coaches are usually found at athletes' training locations and it is recommended that the trainers always accompany the athletes when conducting consultations or taking action by a doctor. Meanwhile, the staff who are most often seen in hospitals are usually clinical support personnel, although there are hospitals that also carry out research in the field of sports medicine.

Specialists come to this hospital according to predetermined hours of practice, except for sports medicine specialists who come only by appointment. Sports physiotherapists work in 2 shifts, namely morning shifts, starting at 08.00-15.00 and day shifts at 14.00-21.00. Nurses are also in 2 shifts, namely the morning shift, starting at 08.00-15.00 and the afternoon shift at 14.00-21.00, sometimes there is a middle shift.

Based on their competence, this hospital has a specialist sports medicine doctor with an educational background of Sp-1 in sports medicine. Meanwhile, orthopedic surgeons are sports medicine consultants with a background in subspecialty education and a consultancy degree in the field of sports medicine. Meanwhile, sports

physiotherapists have a minimum education of a D-IV and then continue to attend training in the field of sports medicine. As the following narrative:

"Physiotherapists here must be at least D4, must have experience in sports, be it as a medical team, instructor, coach, have a certification from PFOI, such as taping sports, A to Z training for injury cases. So not blind with sports injuries... then level one training." (14)

"Physiotherapy must be related to sports. It can't be careless." (11)

Initially, this hospital even had sports physiotherapists who had participated in training in the Philippines, but unfortunately, even though this staff has shared knowledge with other sports physiotherapists, this staff has resigned.

"Actually, we used to have a sports physiotherapist who we gave training to the Philippines, had transferred knowledge to his friends, but he himself resigned." (12)

Finally, for nurses, there are those with DIII Nursing education and some with Nursing Profession education (NERS). The suitability of sports medicine service providers between literature study and those provided by this hospital, namely (Table 1).

Some literature also adds that in addition to sports medicine specialists and sports medicine consultant orthopedic surgeons, the presence of physical medicine and rehabilitation specialists is also important in a sports medicine team.⁴ Other literature includes doctors who specialize in heart and blood vessels.^{5,6}

Equipment Availability

Meanwhile, from the equipment provided by the hospital, there is equipment that is specifically placed in the sports medicine service unit, one example of which is physiotherapy modalities such as Transcutaneous Electrical Nerve Stimulation (TENS), Ultrasound, Shock Wave Therapy (SWT), Laser, and Ice Packed.

There is also equipment that is not specifically placed in a sports medicine service unit but is available as a hospital facility so that this tool is also very helpful to support sports medicine services, such as arthroscopy equipment for management operations, various equipment for laboratory examinations, and radiological examinations such as Conventional Radiology (X-Ray), Computed Tomography Scan (CT-Scan), Ultrasonography, Echocardiography.

Table 1. The Suitability of the Availability of Personnel in Sports Medicine Services at XYZ Hospital with a Literature Study

Sports Medicine Team According to Literature Study	Personnel at RS XYZ		Information
	Sports Medicine Team	Non-Sports Medicine Team	
Medical Specialist	√ Sports Medicine Specialist Consultant Orthopedic Surgeon, Sports Medicine	√ Various Other Specialist Doctors	No There is no specific profession in the field of specialist foot disease Maintenance of Hospital Facilities and Infrastructure
Physiotherapist	√		
Sports Psychologist			
Nutritionist		√	
Dentist		√	
Podiatrist			
Equipment Manager Staff	√	√	
Health Education Provider			

Source: Primary data, 2020

There is also actually has other modalities such as Shock Wave Diathermy (SWD), Microwave Diathermy, and Infrared Ray, but according to the informants, these modalities are not suitable for use in the management of sports injuries, as follows:

"Most sports physiotherapists only use ultrasound, TENS." (17)

"The most important things are ultrasound, TENS, and ice packed. The addition of SWT. In sport don't use SWD/heater. Light is not used. In sports, heating is not a good modality. It is for vasoconstriction, but we're for vasoconstriction." (14)

However, the informant's opinion was different from one of the studies which stated that SWD can also overcome problems, one of which is knee osteoarthritis.⁷ In addition to the physiotherapy modality equipment, it is also equipped with Gym equipment as follows (Tables 2).

The availability of the equipment was felt to be sufficient by the informant as a service provider, it was just that the informant provided input if the equipment should be upgraded to be more modern.

"Here it is adequate ... at most the problem of developing models such as we are still using ice packed, other hospitals have used compressors." (14)

XYZ Hospital does not have Cardiopulmonary Exercise Testing (CPET) for VO₂Max measurement, Magnetic Resonance Imaging (MRI) and

Bone Mineral Densitometry (BMD) for bone density measurement or Dual X-Ray Absorptiometry Scan (DXA Scan) which is used for body composition measurements.

"We don't have CPET at this time" (17)

"We don't have an MRI. There are many who need MRI, especially in our case, the majority of ACLs. If there is a patient who needs an MRI, we will refer to the nearest hospital. We take the patient there by ambulance" (13)

In order to continue to provide optimal service, the hospital collaborates with local hospitals to carry out MRI examinations. Meanwhile, body composition measurements were carried out using a Body Mass Index (BMI) measuring device with the Takita Brand.

DISCUSSION

Personnel Availability

Based on Table 1 regarding the suitability of the availability of personnel in sports medicine services at this hospital with a literature study, it already has various types of workforces that can support sports medicine services, and not only from one type of profession. This is in line with other studies which state that the providers of sports medicine are not only sports medicine specialists, but also other specialists and disciplines who have interests and competences in the field of sports.³

Table 2. Facilities and Equipment in the Gym Room 1 and Room 2

Name of Goods or Equipment	Amount
Room 1	
Adjustable Hi / Lo Pulley (Tool 1 set, Grip handle 2 pieces, leg tie 1 piece)	
Leg Press	1 set
V Bench Leg Curl	1 set
X2FIT Exercise	1 set
Dumble Set (1 piece of dumble rack, 2 pieces of 2.5 kg dumble, 2 5 kg dumble, 2 7.5 kg dumble, 2 10 kg dumble, 2 12.5 kg dumble 2 pieces, 2 15 kg dumble 2 pieces of dumble 17.5 kg, 2 pieces of 20 kg dumble, 2 pieces of 22.5 kg dumble, 2 pieces of 25 kg dumble, 2 pieces of dumble 27.5, 2 pieces of dumble 30 kg, 2 pieces of dumble pink	1 set
Patient's bed	1 piece
Exercise Chair	1 piece
TRX set Rip-60 (TRX training strap)	1 piece
Brown round chair	2 pieces
Foam	5 pieces
Football	2 pieces
Obstacle	5 pieces
Yoga Mat	2 pieces
Baseball	1 piece
Decathlon Rubber	1 piece
Basketball	2 pieces
Box Exercise (15 cm, 30 cm, 45 cm, 60 cm)	4 pieces
Long Cone	8 pieces
Short Cone	13 pieces
Kettle Bell 4 kg	2 pieces
Kettle Bell 6 kg	2 pieces
3 kg ball	1 piece
Toolbox	1 piece
Balance	1 piece
Room 2	
Static Bike Impulse (with and without backrest)	1 piece
Treadmill	2 pieces
Gym Ball	6 pieces
Yoga Carpet	6 pieces
Trampoline	2 pieces
Cone Exercise	8 pieces
Air Pad (for balance training)	1 piece
Agility Ladder	1 piece
Flexibility Box Test	1 piece
Life Fitness X91	1 piece
Foam Roller	1 piece
Bed Mattrass	1 piece
Basketball	2 pieces
Foam	4 pieces
Short Cone	10 pieces
Meter	2 pieces
Football	4 pieces
Bosu	1 piece
Ball Pump	1 piece
Toolbox	1 piece
Balance	1 piece

Source: Primary data, 2020

The clinical support staff consists of specialist doctors, physiotherapists, sports psychologists, nutritionists, dentists, podiatrists, equipment managers, and health education providers. In detail, it can be seen as in the following picture (Figure 1).

According to Madden et al., service providers who are included in the sports medicine team consist of several elements, namely elements of doctors who consist of clinical support staff and support staff in the field of research; elements of a trainer (coach); elements of athletic trainer power, where all three will surround an athlete. The environment around the athlete itself is also surrounded by "other individuals" ranging from teachers, friends, teams, and their families.⁸

In line with Madden et al., Elmagd's research also states that several practitioners in the field of sports medicine, apart from sports medicine specialists, also collaborate with various other health and fitness professions such as nutritionists, psychologists, and health managers or trainers. Each specialization has attended training in their respective fields with a minimum education of a bachelor or graduate degree, and even needs to have practical experience in their field for several years.¹

In this case, according to the research conducted by Madden, it seems to only need to complement the availability of sports psychologists that do not yet have.⁸ Meanwhile, for nutritionists and dentists, the hospital should ask the hospital's willingness to join as a sports medicine team. On the other hand, for podiatrists and health educators, their roles can be performed by doctors in the field of sports medicine who have competence in the foot area,⁹ and other personnel with competence as health educators during their previous education.

The occurrence of sports injuries in elite and recreational athlete can have a negative impact and even cause emotional disturbances. When injured, athletes will experience various emotional and psychological stresses¹⁰ such as depression, anxiety,¹¹⁻¹³ loss of their identity,^{11,12} suicidal ideation, eating disorders, substance use/abuse, fluctuations in motivation, feelings of exclusion,¹¹ recurring injury, requiring longer physical rehabilitation, career transition,¹² or even ending their career as an athlete.

Psychological stress due to injury will increase the risk of infection and inflammation which will affect the time to achieve return to play.¹⁰ Injury recovery in athletes is not complete until the athlete is psychologically ready to return to play.¹⁴ Just as athletes need a physical healing process, they also need psychological healing or intervention from injuries such as helping the injured athlete cope more effectively with these emotional responses and help prepare them to get back to their sport and games.¹⁵

Apart from injury, various other mental risks such as sleep disturbances, failure, overtraining, and low social support, especially in elite athletes, can affect the severity and emergence of certain mental health symptoms that require appropriate recovery response strategies.¹⁶ Therefore, the existence of a sports psychologists in this matter is very important to restore the mental health of athletes.

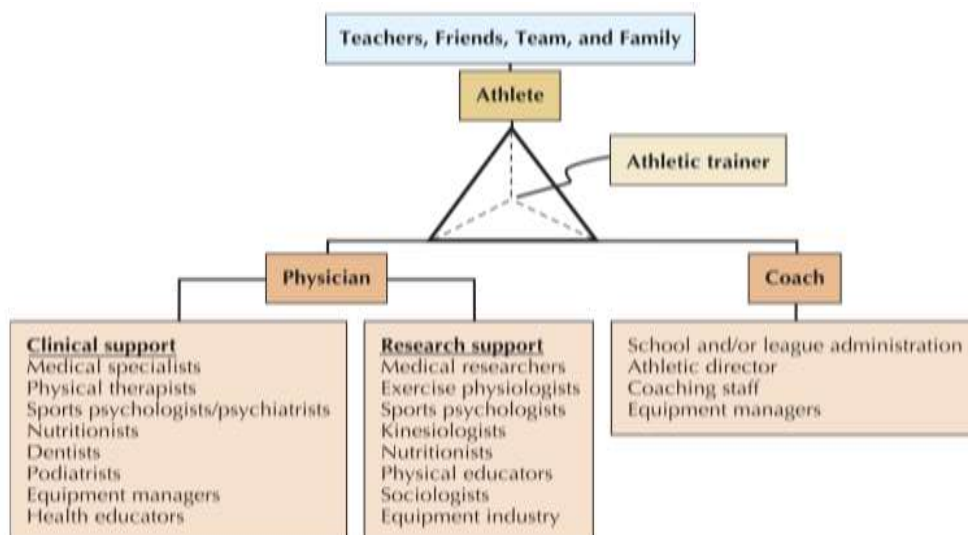
Sports psychologists teach techniques to help athletes improve their motor skills, help athletes cope with competitive stress and anxiety, fine-tune the level of awareness athletes need to achieve optimal performance and not lose focus amid distractions and in a competitive environment, trying to determine the relationship between two or more variables, e.g. anxiety and performance, or conducting experiments to find out changes that occur in an athlete either in the

training environment or on the field, help reduce or prevent emotional problems in individual athletes and teams while trying to increase the athlete's emotional performance potential, help athletes have a good level of coping after injury, and educate prospective athletes, coaches and others related to sports, including administrators.^{15,17}

A podiatrist is a podiatrist or registered primary health care practitioner, as well as a doctor of podiatric medicine or podiatric surgeon.^{9,18} using medical, physical, palliative and surgical means,⁹ who have the education and training qualifications to diagnose, treat,¹⁸ prevent, and rehabilitation treatment of conditions⁹, disorders, diseases, and injuries affecting the feet, ankles and related structures in the feet and lower legs.^{9,18}

As part of a health care team, podiatrists work closely with other health professionals to treat and control disease. They also prevent, manage and treat leg pain, deformities and infections and aim to keep people of all ages moving and as active as possible.¹⁹ This expertise as a podiatrist can be obtained from formal education as a specialization, as well as training.

In Indonesia, there is no special specialization to deepen foot problems, but patients can consult a doctor who has competence about feet according to their complaints.²⁰



Source: Madden et al. (2018)

Figure 1. Sports Medicine Team

Equipment Availability

Based on the available equipment, when viewed based on its function as exercise and fitness checks related to health (health-related fitness) and fitness tests related to skills (skill-related fitness), it actually fulfills service needs. The existence of various rehabilitation equipment provided by the hospital is also felt right. According to research, rehabilitative equipment such as radial Extracorporeal Shock Wave Therapy (rESWT) is a non-invasive procedure that can stimulate tissue regeneration and angiogenesis and has been used effectively to treat various types of tendinopathy and fasciopathy including plantar fasciopathy, Achilles tendinopathy, patellar tendinopathy, greater trochanteric pain syndrome, proximal hamstring tendinopathy, lateral and medial epicondylitis, and calcifying tendinosis of the shoulder.²¹

Ultrasound is also useful and according to research, it is currently used as the main tool for examining superficial soft tissues, such as tendons and muscles, because it is cost-effective, accurate, and allows real-time dynamic imaging in the examination room.²² Some physicians (48, 3%) who performed intraarticular injections of the pelvis also used ultrasound as a guide for injection (46%).²³ The use of POCUS has also been considered by some to be the fifth component of a physical examination after inspection, palpation, auscultation, and percussion.²⁴

However, the hospital should not be satisfied with the availability of the equipment it currently has. We recommend that if it wants to make sports medicine services center of excellence, the hospital needs to have equipment that becomes the gold standard, one of which is Cardiopulmonary Exercise Testing (CPET) which is used as the gold standard in assessing aerobic fitness objectively where the exchange of respiratory gases, ventilation, and measurement of heart rhythm are continued,²⁴ with the application of gradually increasing intensity training until fatigue develops or until limiting symptoms and/or signs develop.²⁵

CPET can provide an evaluation of the integrative exercise response of the cardiovascular, respiratory, and metabolic systems with an additional work-rate enabling evaluation of rest, sub-maximal, and peak exercise response, as well as recovery response; provide physicians with relevant information for clinical decision making

such as evaluation of exercise intolerance, eligibility for organ transplantation, and preoperative risk stratification.²⁵

Likewise the availability of the DXA Scan tool which is the gold standard for the diagnosis of body composition which is often compared to chemical analysis, dissection, and anatomy-based imaging methods (CT-Scan or MRI); measurement of muscle mass in a European study,²⁶ and is currently also used in a variety of clinical settings with the prospect of diagnosing osteoporosis, obesity, and sarcopenia.^{26,27}

MRI in sports medicine services is also important as a supporting examination in sports injuries, especially musculoskeletal injuries,^{8,28,29} and occasionally head injuries.³⁰ MRI has been shown to provide an excellent evaluation of the ligaments and tendons, with the ability to show associated intraarticular abnormalities, joint effusions,²⁸ muscle disruption, and edema or the presence of intramuscular adipose tissue/fibrosis.³¹

3 Tesla or 1.5 T optimized MRI allows the presence of muscle injury to be determined with excellent resolution, and allows acquisition in three planes, including inclined planes, and assessment of deep muscles. In elite athletes, MRI is considered the imaging modality of choice for predicting when athletes can return to play after an acute muscle injury, along with a variety of other player-related factors, as well as predicting the timing of sports training after a player has sustained an injury.²⁹ Therefore, the hospital management should consider providing this equipment in the future.

Thus, in an effort to improve and develop sports medicine services, the hospital is expected to gradually complete the manpower and equipment needed to support sports medicine services.

CONCLUSION AND RECOMMENDATION

Hospital has provided personnel and equipment that are relatively complete and in accordance with the literature study. Sports psychologists, MRI, and several equipments that have become gold standards such as CPET and DXA Scan should become a plan for the development of sports medicine services so that they can be fulfilled in the future as well. In this study, it has been described how the availability of personnel and equipment in hospitals that provide sports

medicine services. However, one of the shortcomings in this study is that it only looks at one hospital location so that it is not sufficient to describe the condition of personnel and equipment at other hospital locations.

It is hoped that the next research can take more hospital locations, if necessary from different hospital classes. In addition, further research is also expected to be able to take more informants who represent various professions in the field of sports medicine, especially professions whose opinions have not been adequately represented in this study so as to get a more comprehensive picture of how the suitability of personnel and equipment that the hospital has with existing literature studies.

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Do Ethical Climate Have Impact on Job Satisfaction of Staff in West Sulawesi Hospital, Indonesia?

Apakah Iklim Etika Berdampak pada Kepuasan Kerja Staf di Rumah Sakit Sulawesi Barat, Indonesia?

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ABSTRACT

A positive ethical climate can create job satisfaction for employees. This study aims to see the effect of ethical climate on the job crafting of health workers and its impact on job satisfaction. This research is a quantitative study with a cross-sectional study approach. The population consisted of health workers at RSUD Mamuju, RS Bhayangkara Polda Mamuju and RS Mitra Manakarra Mamuju, West Sulawesi Province with 155 employees selected as samples. Samples were selected by quota sampling, then analyzed using the Path Analysis test at SPSS 20. The value of standardized coefficients beta as a direct effect is 0.023 and the indirect effect is 0.043, meaning that the value of the indirect effect is greater than the value of the direct effect. These results indicate that indirectly the Ethical Climate (EC) through Job Crafting (JC) has a significant impact on Job Satisfaction (JS). Thus, "there is an effect of EC (X) through JC (Y) on JS (Z)". JC mediates EC in improving employee JS. Job crafting can affect job satisfaction if hospital staff have another supporting factor, namely the ethical climate. To improve the ethical climate by providing a motivational boost, management must identify the dimensions of employee work activities in job crafting, apart from training and feedback from direct superiors.

ABSTRAK

Iklim etika yang positif dapat menciptakan kepuasan kerja bagi karyawan. Penelitian ini bertujuan untuk melihat pengaruh iklim etika terhadap job crafting tenaga kesehatan serta dampaknya terhadap kepuasan kerja. Penelitian ini merupakan penelitian kuantitatif dengan pendekatan penelitian potong lintang. Populasi adalah pegawai kesehatan RSUD Mamuju, RS Bhayangkara Polda Mamuju, dan RS Mitra Manakarra Mamuju, Provinsi Sulawesi Barat dengan 155 pegawai terpilih sebagai sampel. Sampel dipilih secara sampling kuota, kemudian dianalisis menggunakan uji Analisis Jalur pada SPSS 20. Nilai standardized coefficients beta sebagai pengaruh langsung sebesar 0,023 dan pengaruh tidak langsung sebesar 0,043 artinya nilai pengaruh tidak langsung lebih besar dibandingkan dengan nilai pengaruh langsung. Hasil tersebut menunjukkan bahwa secara tidak langsung iklim etika (EC) melalui Job Crafting (JC) mempunyai pengaruh signifikan terhadap kepuasan kerja (JS). Sehingga, "ada pengaruh EC (X) melalui JC (Y) terhadap JS (Z)". JC memediasi EC dalam meningkatkan JS karyawan. Job crafting dapat mempengaruhi kepuasan kerja apabila petugas rumah sakit memiliki faktor pendukung lain yaitu iklim etika. Meningkatkan iklim etika dengan memberikan dorongan motivasi, manajemen harus mengidentifikasi dimensi kegiatan kerja karyawannya dalam job crafting, selain dari pelatihan dan umpan balik dari atasan langsung.

INTRODUCTION

In facing the future model society which is currently better known as the era society 5.0 the health sector also contributes to responding to change.¹ The hospital industry adopts a bottom-up approach that allows employees to actively participate in innovation and creativity.² The skills and competitive advantages possessed by employees can provide changes in their work so that it has an impact on improving performance. The quality of employee performance in the health sector depends on the satisfaction provided by health care providers.³

In terms of job satisfaction, the study of health personnel done by the Indonesia Health Ministry found that there were still 23,9% of health personnel in Indonesia who felt dissatisfied with their job the and majority of these groups were from west Sulawesi.⁴ Some literature found that job satisfaction is influenced by some factors, such as diversity, personality, value, job crafting, self-efficacy, optimism, self-undermining and motivation.^{5,6} Therefore, the researcher are interested to do a study about job crafting in West Sulawesi.

Job crafting is a self-initiated behavior by employees to make changes in their level of job demands or job support.^{7,8} Job crafting changes the basic desires in employees by finding positive meanings in the workplace and building a positive sense of identity in the organization. The benefits of job crafting for organizations can be found the in previous research, which found that job crafting has a relationship and a role in improving employee performance in the organization.⁹ Several studies on job crafting have also been carried out, such as the role of employee job crafting in facing changes in organizations.⁷

As with the role of job crafting in organizations, when combined with the organizational climate, it will further encourage employee performance levels.² In health care, these are described as implicit and explicit values that drive the availability of health services and shape the workplace in which health services are provided. Organizational climate is closely related to the process of creating a conducive work environment in order to establish harmonious relationships and cooperation between all individuals or human resources in the organization.¹⁰ Motivated employees will definitely improve work efficiency, thus becoming a bridge between

hospital management and employee performance in achieving goals.

In carrying out the job crafting process, it cannot be separated from the characteristics of the work itself. Job characteristics are one of the factors that affect employee job satisfaction. A positive ethical climate can create job satisfaction for employees.¹¹ Climate that supports Job Crafting in Tehranineshat's research, states that a supportive ethical climate can facilitate employees to explore in finding work methods that can increase job satisfaction and reduce job fatigue.¹²

The ethical climate plays a key role in determining job satisfaction and commitment of healthcare workers.¹³ However, there is still a lack of research that examines the role of job crafting in mediating the ethical climate for health workers to increase job satisfaction. Based on this background, researchers developed research to see the influence of the ethical climate on the job crafting of health workers and its impact on job satisfaction.

MATERIAL AND METHOD

This research was a quantitative study with a cross-sectional study approach. This study was conducted in 2020 at three hospitals in West Sulawesi. The population of this study were hospital staff totaling 614 officers in Mamuju Regency, West Sulawesi, namely: RSUD Mamuju, RS Bhangkara Polda Mamuju and RS Mitra Manakarra Mamuju. The sampling technique was quota sampling, totalling 155 hospital staff selected as samples with inclusion and exclusion criteria. The research instrument used as a tool to collect data in this study is a structured questionnaire that has been valid and reliable.

The Ethical Climate (EC) instrument uses 15 items from the Ethical Climate Questionnaire developed by Cullen including the dimensions of care, independence, law and code, rules and instrumentals.¹⁴ EC was measured using a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). The Job Crafting (JC) Instrument uses 21 items from the Job Crafting Questioner developed by Tims and Bakker.¹⁵ Among them consist of the dimensions of structural work resources (5 items), hindering job demands (5 items), social work resources (5 items), and challenging job demands (5 items). JC is measured using a 4-point Likert scale from 1 (never)

to 4 (always). The Job Satisfaction (JS) instrument uses 15 items from the Job Satisfaction Scale developed by Warr, Cook and Wall.¹⁶ Among them consist of the dimensions of intrinsic job satisfaction (8 items) and extrinsic job satisfaction (7 items). JS was measured using a 6-point Likert scale from 1 (very dissatisfied) to 6 (very satisfied). Data was Analyzed using the Path Analysis test at SPSS 20. The results of data analysis in this study were presented in tabular form accompanied by an explanation in the form of a narrative.

RESULTS

Based on Table 1, the respondents in this study were dominated by female respondents as many as 127 people (81.90%) while the remaining 28 male respondents (18.10%). The age of the majority of respondents (63.90%) \leq 30 years, respondents were dominated by nurses (63.90%), most were not civil servants and the majority of respondents had a working period of $>$ 2 years as many as 89 people (57.40%).

Table 1. Characteristics of Respondents

Characteristics	n = 155	%
Gender		
Female	127	81,90
Male	28	18,10
Age		
\leq 30 Years	99	63,90
$>$ 30 Years	56	36,10
Type of Officer		
Doctor	8	5,20
Dentist	1	,60
Nurse	99	63,90
Midwife	9	5,80
Medical Technician	8	5,30
Pharmacy	10	6,60
Public health	2	1,30
Other Health Workers	5	3,30
Non-Health Workers	13	8,60
Employment Status		
PNS/CPNS	22	14,20
PPPK	15	9,70
Honors	44	28,40
Permanent	5	3,20
Contract	49	31,60
Not fixed	16	10,30
Other	4	2,60
Length of work		
\leq 2 Years	66	42,60
$>$ 2 Years	89	57,40

Source: Primary Data, 2020

The results of the analysis of this study use the Path Analysis test, namely path analysis using intervening variables to see the direct and indirect effect of the independent variable through the intervening variable on the dependent variable.

Regression Analysis (EC and JC against JS)

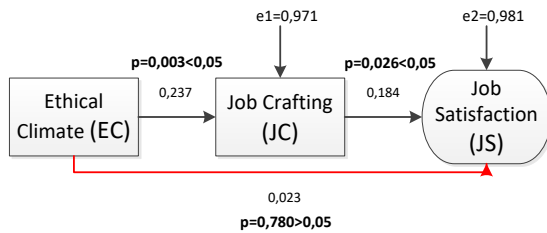
Based on the Regression Model I output in Table 2 coefficients, it is known that the significance value of the EC variable = $0.003 < 0.05$. These results conclude that regression model I, namely the EC variable has a significant effect on JC. The value of R² or R Square found in the Summary Model table is 0.056, which means that the contribution or contribution of EC's influence on JC is 5.6%, while the remaining 94.4% is the contribution of other variables was not included in the study. For the value of e₁, it can be obtained from $e_1 = \sqrt{1-0.056} = 0.971$. Based on the Regression Model II output in Table 2 coefficients, it is known that the significance value of the variable EC = $0.780 > 0.05$ and JC = $0.026 > 0.05$. These results conclude that regression model II, namely the EC variable does not effect on JS, while the JC variable has a significant effect on JS. The magnitude of the R² or R Square value found in the Model Summary table is 0.036, meaning that the contribution or contribution of the influence of EC and JC on JS is 3.6% while the remaining 96.4% is the contribution of other variables not included in the research. For the value of e₂, it can be obtained from $e_2 = \sqrt{1-0.036} = 0.981$.

It is known that the direct effect given by EC on JS is 0.023. Meanwhile, the indirect effect of EC through JC on JS is the multiplication of the beta value of EC against JC with the beta value of JC on JS, namely: $0.237 \times 0.184 = 0.043$. Then the total effect given by EC on JS is the direct effect plus the indirect effect, namely: $0.023 + 0.043 = 0.066$.

Table 2. Regression Analysis of the Effect of Ethical Climate and Job Crafting on Job Satisfaction of Health Workers in West Sulawesi Hospital

Regression Model	Standardized Coefficients	Sig.	R. Square
Ethical Climate $>$ Job Crafting	0,237	0,003	0,056
Ethical Climate $>$ Job Satisfaction	0,023	0,036	0,780
Job Crafting $>$ Job Satisfaction	0,184	0,036	0,026

Source: Primary Data, 2020



Source: Primary Data, 2020

Figure 1. Path Analysis of the Effect of Ethical Climate and Job Crafting on Job Satisfaction

DISCUSSION

Based on the Regression Model I output, it was found that the EC variable had a significant effect on JC. As for the Regression Model II output, it was found that the EC variable did not affect on JS, while the JC variable had a significant effect on JS. These results represent the findings in this study that JC mediates EC in increasing employee JS. Based on the results of the above calculations, it is known that the value of the direct effect is 0.023 and the indirect effect is 0.043, which means that the value of the indirect effect is greater than the value of the direct effect. These results indicate that indirectly EC through JC has a significant effect on JS. Thus, "there is an effect of EC (X) through JC (Y) on JS (Z)". A supportive ethical climate can affect employee commitment in the organization, so it is assumed that a high commitment to the organization can facilitate the emergence of Job Crafting among organizational staff.¹⁷

This is in line with the research of Sengkey and Meiyanto, which found that a positive work ethic climate is related to increasing employees' proactive efforts to make changes towards balancing job demands and job resources. This relationship is a predictor of the working climate together with transformational leadership, so that it makes a positive contribution to Job Crafting. This means that the more positive the perception of the work climate, the more Job Crafting will increase for hospital staff.²

The climate that supports Job Crafting in Tehrani Neshat's research, that a supportive ethical climate can facilitate employees to explore in finding work methods that can increase job satisfaction and reduce job fatigue. Work fatigue in the form of emotional exhaustion and deperson-

alization that develops together with a bad ethical climate in the organization, is influenced by professional values. The existence of a healthy ethical climate can guarantee the professional values of the organization and significantly increase job satisfaction and the quality of health services.¹² This is in line with M. Faramarzpour in his research which found that there was a significant direct relationship between aspects of ethical climate and job satisfaction of nurses in hospitals.¹⁸

Health care workers who have positive work satisfaction can defend patient's rights according to their values and beliefs in quality health services. Health workers who serve patients with an ethical climate will get personal satisfaction when they work. The ability of health workers to improve the quality of services depends on their work arrangements. The decline in the quality of health services may be due to excessive job demand.

The ethical climate is a function of organizational performance and procedures that vary between individuals and organizations. Ethical climate is part of the space or organizational culture that affects the ethical dimensions of employees and also their work efficiency in the workplace. Therefore, the ethical climate that affects the performance of the staff in the hospital.¹⁹ A healthy ethical climate can facilitate ethical decision-making. The relationship between ethical climate and job satisfaction is in line with Abou Hashish E's research, that the ethical climate has a positive relationship with job satisfaction, professional competence, personal care, organizational support, organizational commitment, satisfaction with the quality of health services, convention management, and existing conflicts, work, career beliefs, efficiency effects, and collaboration between health workers.¹³

A positive climate can create job satisfaction for employees, so employees feel comfortable and last longer in the organization. The pleasant feeling obtained in health care is an index of job satisfaction. Therefore, if the hospital does not support the ethical climate of employees in the workplace, then the service will have an impact on work and will affect the effectiveness of the health provided to patients.

Health workers in the emergency department were found to experience work fatigue more due to the high level of work experience and many accept passive adaptive models while carrying out their jobs. So that it is important to provide organizational support as a factor that can increase job satisfaction for health workers.²⁰ This results in a better ethical climate, where health workers will respond well if there is ethical tension and causes of dissatisfaction in the workplace can decrease.

A poor ethical climate is characterized by developing emotional exhaustion in hospitals.²¹ Yuhyung in his research found the role of emotional exhaustion and work ambiguity as mediation towards manager job crafting in reducing employee turnover. Job crafting can impact job satisfaction if hospital staff have another supporting factor, namely the ethical climate. A satisfying ethical climate can increase personal motivation which will impact on the performance of health workers. The ethical climate increases when the organization encourages work motivation for health workers. Employee motivation to fulfil the need for positive self-evaluation has an impact on job satisfaction through job crafting.²²

A professional work climate is characterized by accepting of ethical codes, regulations, management, and voluntary work requests. Providing appropriate job crafting from the organization, can encourage work motivation, internalization of professional norms and values which will lead to better job satisfaction.¹² Job satisfaction is achieved so that the quality of health services can be optimal for patients. In providing a motivational boost, management must identify the dimensions of its employees' work activities in job crafting, apart from training and direct feedback.

CONCLUSION AND RECOMMENDATION

Job crafting mediates an ethical climate to increase employee job satisfaction. Job crafting can have an impact on job satisfaction if health workers in hospitals have other supporting factors such as an ethical climate. To improve the ethical climate by providing motivation, management must identify the dimensions of employees' work activities in job crafting, apart from training and feedback from direct superiors.

Some questions arise from this study, how nurses can do job crafting while most of prosedur in patients care have a standard procedure, which can be a stressor for nurses. They should do repetition procedure leading to bored job. It is recommended for future research is doing qualitative research to explore the job crafting among nurses.

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Effect of Dreall Healthy about Sedentary Life Style for Increasing Motivation to Children with Obesity

Pengaruh Dreall Healthy tentang Aktivitas Sedentari dalam Meningkatkan Motivasi untuk Anak dengan Obesitas

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ABSTRACT

The Increasing prevalence of children with obesity was showed in all around the world include in Indonesia. The dominant factor was a sedentary life style and lack of activity. Those habits would be made the energy being unused so the fat will be accumulation become obesity. This Study aimed to know the effect of dreall healthy sedentary lifestyle on obese school-age children. This research was used pre-experimental with one group pre posttest design to analyze the data about motivation. The number of was 60 school-age children with obesity in Palembang city the data collected by using questioner after arranging the puzzle that was a development based on the collected data. The statistic result with Wilcoxon test showed improving motivation with the result $p=0,001$. Fun education might become one method for increasing motivation on children to raise their physics activity.

ABSTRAK

Peningkatan pravelensi anak dengan obesitas ditunjukkan pada seluruh dunia termasuk Indonesia. Faktor yang dominan adalah gaya hidup bermalasan dan kurangnya aktivitas. Kebiasaan tersebut akan membuat energi tidak terpakai sehingga lemak akan terakumulasi menjadi obesitas. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh dari dreall healthy tentang sedentary life style pada anak usia sekolah dengan obesitas. Penelitian ini menggunakan pre-eksperimental dengan desain one group pre posttest untuk menganalisis data tentang motivasi. Jumlah responden adalah 60 siswa usia sekolah dengan obesitas di Kota Palembang. Data dikumpulkan menggunakan kuesioner setelah menyusun puzzle yang telah dikembangkan berdasarkan pengumpulan data. Hasil statistik dengan uji Wilcoxon menunjukkan peningkatan motivasi dengan hasil $p=0.001$. Edukasi yang menyenangkan bisa menjadi satu metode untuk meningkatkan motivasi anak dalam meningkatkan aktivitas fisiknya.

INTRODUCTION

One of the global health problems is obesity in children. The prevalence of obesity is rapidly increasing worldwide, years by years. Almost 200 million school age children worldwide had an overweight, and almost 50 million of them with obese.¹ A number of studies show that overweight and obese on school age children rate continually increases from year to year.²

Obesity has a bad impact, either physical or psychic. Children's age is the moment of growth and development. If obesity child's age is not to be overcome, it increases a risk factor of various metabolic diseases such as degenerative diseases, diabetes mellitus, and cardiovascular disease.³ The combination of binge eating and obesity is particularly problematic with regard to comorbidity and risk. Psychological problems such as poorer body image also can be an effect in people with obesity.⁴ There are several factors of influence that directly or indirectly affect the risk of obesity such as genetic predisposition to social, economic, and physical environmental condition.⁵ One of the dominant factors is the lack of physical activity (sedentary lifestyle). Children and adolescents do not practice enough physical activity or have too much unbalanced nutrition, and the consequence of these unhealthy and bad habits is overweight that can lead to obesity, impairment of health and, implicitly, the quality of life.⁶ Children's activity currently is dominated by the activity with lack movement like playing online games in front of the computer, sat too long to play social media via smartphone or less on walking because laid down by a motor vehicle. It would be made the energy being unused so resulting accumulation of fat.

Based on the data from the health profile of Palembang City, there was an increasing number of obesity accusative, especially on children.⁷ For overcoming this occasion, it will need exertion to reduce the rising amount of obesity. Fun education using games was one way which to increase the motivation for children to increase their physical activity and subtract the sedentary lifestyle. In the educational context, games have been integrated little by little into learning processes. The use of games for example *Modified Snakes and Ladders Game* or *Dreall Healthy* in education can increase students' motivation

and knowledge.^{8,9} The development of education games that is dreall healthy which a kind of puzzle game that have contain about sedentary life style and physical activity would become a media for reduce the number of obesity step by step starting from increasing the motivation of children to reduce sedentary life style and increasing the physical activity. The study aimed was to know the effect of dreall healthy about sedentary lifestyle on obesity school-age children to improve the motivation of obesity children for reducing their sedentary lifestyle.

MATERIAL AND METHOD

This research used action research, the researcher exploring the experience and information from respondents about sedentary life style first as a based data to develop the dreall healthy. Pre-experiment with one group pre-posttest design was used to analyze the data about children's motivation in reducing sedentary lifestyles. Population was an elementary school student in Palembang city. Sample election used purposive sampling. They selected by inclusion criteria that was have an obesity nutritional status. The number of respondents was 60 school-age children with obesity. Respondents aged from 8-13 years old were students from two elementary schools at Palembang City in 2019. Respondents select with obesity using measurement of height and weight with Z-Score indicator >2 SD. The variable of this research was the motivation value of children for increasing physical activity and reducing sedentary lifestyle. The respondent arranged the puzzle (dreall healthy), which had developed before based on the collected data in the first phase.

Data collected by using questioner. For the first step, the questioner was using to collect the sedentary lifestyle data of the respondent as a based data to develop the content on the puzzle of dreall healthy. The second step, questioner was using pre-test and post-test after arranging the puzzle (dreall healthy) that were developed based on the collected data. For the univariate analysis, descriptive computation of data from the children about characteristics was reporting on gender (boy/girl), level of class, age of the student, and how the children go to school. The bivariate analysis is using for a quasi-experiment with one group pre-posttest design. It was used

to analyze the data about the motivation of children in a sedentary life style. The research protocol for the study was approved by the Regional Ethics Committee for research with human subjects at Health research review committee, Faculty of Medicine, Sriwijaya University, Indonesia with number 256/ kepkrsmhfkunsri/2019. Before the discussion and intervention, the student and teacher were provided with written information about the purpose of the intervention and the discussion. The student also could ask their parent first before decided to join as a respondent. They were asked to inform about the study and thereafter for written consent on their behalf if they decided to participate. The students were also informed that their participation was voluntary and the possibility of withdrawing at any time.

RESULTS

The characteristics of the respondent are presented in Table 1. The majority of the included in this study population (60%) is a boy. The majority of the respondents are in the fifth grade of elementary school (56.7%), and the aged are ten years old (33.3%). Most of the respondent was using public transportation (*ojek*) and motor vehicle with their parents (81.7%) and only 18.3% respondent walking on foot.

Table 1. Characteristic of Respondent

Characteristic	n=60	%
Gender		
Boy	36	60
Girl	24	40
Class		
IV	11	18.3
V	34	56.7
VI	15	25
Age (Years)		
8	2	3.3
9	17	28.3
10	20	33.3
11	10	16.7
12	10	16.7
13	1	1.7
How go to School		
By Motor Vehicle with Parents	37	61.7
By Motorcycle Public Transport	12	20
On foot	11	18.3

Source: Primary Data, 2019

The motivation mean value of the respondent is presented in Table 2. Analysis data was using the Wilcoxon Test. The table showed the mean number of motivation after the intervention was increasing from 5.70 become 7.43. The *p*-value number is 0.001, which showed value differences after conducting the intervention while playing the dreall healthy. There was also 51 respondent who have the raising motivation value.

DISCUSSION

The Characteristics of the respondent are presented in table 1. The majority of the children in this study is a boy (60%). This data is similar to the research in which is some articles showed that the highest prevalence of obesity in school-age children is in the boy than a girl.¹⁰ A number of studies also analyze the possibility of the relationship between activity based on playing games in smartphone and computer that the boys are more like to do this activity such as playing online games, computer, and others compared with girls.⁶ Not only that on school age children, boy was tended to consume energy, carbohydrates, protein, and fat than girls, which can directly contribute to obesity.¹¹

In this research, the majority age of the respondent is ten years old, about 20 respondents (33.3%). Almost of all respondent was in the fifth grade elementary school. At the age of this, children have been given the freedom by parents to obtain their own mobile. Based on the discussion of the respondent, the hobby of child was playing games on the cellphone with the duration time about over 4 hours a day. Children and adolescents aged 5-18 must be physically active for at least 60 minutes a day, with intense physical exercise being associated with the majority of authors with a better physical condition and well-being.⁶

In addition, based on the data in this research, "how the student goes to school" was given that the majority of children to be taken use of vehicles both when they went and come from school. The other respondent used public transportation (*ojek online*) and only 12 children (20%) who walked to school. The result of this research is similar to the other research on the relation-

ship of sedentary life style with the case of obesity. High sedentary behavior more risk 4,8 times experienced over nutrition or obesity.¹²

Based on the pretest results, the majority of students did not know that the lack of movement could cause obesity. Children will choose to spend a holiday playing games the smartphone or watch television. Based on questioner the children also feel lazy if their playmate called out of the house to exercise play the traditional games.

The condition above showed that an obesity student less conducted physical activity. Activities at schools that tend monotonous are being only sit while studying has not balanced with the physical activities when their spare time. It became a risk factor to increase the weight of child till becoming obesity. There are relationships between physical activity and obesity related to an expenditure of energy where there is accumulation of fat in the body. This is affected directly by intake the energy and the expenditure of total energy, which not balance.

According to Manore *et al*, the intensity of conduct physical activity is an important role in expenditure energy because energy would be issued by doing physical activity. A lack of physical activity would cause surplus energy and will be deposited in the form of fat tissue.¹³

The hobby which selected by children at the research also were not supported for reducing obesity. The majority of children choose to play a game or viewed social media on their smartphone to spend a spare time, moreover until more than 3-4 hours a day. Physical activity affects only 1/3 of to expenditure energy of a person with normal weight. Still, for those who have weight more like obese and overweight, physical activity will play an important role in the expenditure the energy.

Table 2. The Motivation of Children Before and After Intervention

Variable	Mean	Min	Max	Ties	Positive Rank	p
Motivation						
Pre-Test	5.70	3	9	9	51	0.001
Post-Test	7.43	6	10			

Source: Primary Data, 2019

The person with obesity when their exercising the sport, calories will be burned. The more doing the physical activity, calories will be lost to metabolize the body and expenditure of energy. But a person who spends time sitting all day will decrease metabolism of the body. Lack of physical activity will indirectly affect the basal metabolism in the body.¹⁴ One example of sedentary behavior is watching television that contributes to in the development of obesity through an expenditure of energy and surplus intake energy due to feeding for time watching television and the influence of an advertisement.¹⁵

Children with obesity spent more time conducting behavior lack of movement (sedentary lifestyle) such as reading books, using a computer, playing, games, and using passive transportation to school is like motorcycle, car, and bus. The duration of a time regarding mobile screen devices encourages a significantly higher risk of obesity.¹⁶

Dreall Healthy is a form of puzzle game designed with a background that specifically contains content about health. Dreall healthy games can motivate and stimulate children's thinking in applying health values in the game background. This game was innovated in the form of health education needed by school-aged children.¹⁴ In addition, puzzles are called educational games because in puzzle games there are educational elements which can train and improve children's memory, introduce children with various images, colors, and character's forms children love. A study also shows that dreall healthy more effective in improving the knowledge of health information than video education because that can stimulate children's brains.¹⁷

Dreall healthy could enhance the children's motivation about physical activity and subtract sedentarily. Health education with dreall healthy could be an option for the game which can be played by students and give the advantage to enhance student motivation. It was expected that parents, health provider staffs, and counselors in schools to provide fun health education to the children such as dreall healthy. For further researchers, it is expected that researchers could create more interesting and pleasing media for children.

Based on the research results, after conducting educational intervention using dreall healthy, the value of motivating children to decrease sedentary lifestyle and increase physical activity was increasing. Almost of respondents have an increasing motivation value of 51 respondents and there are only of nine respondents in the equal number. The posttest showed students understand that less physical activity can cause overweight to that they will increase physical activity such as doing exercise and sport. Respondents also showed increasing motivation value to reduce the activity such as playing smartphone because it can make less to do physical activity. Playing and exercising the game outhouse becomes an option to children when answered a post-test questionnaire. This result associated with research that showed difference in children self-protection knowledge from sexual abuse before and after sexual education with dreall healthy and animated video with p value 0.000 ($\alpha \leq 0.05$) and there was difference in children self-protection knowledge from sexual abuse between dreall healthy and animated video with p value 0.014 ($\alpha \leq 0.05$).⁸

Human behavior is generally characterized by its striving for efficacy and organized into phases of goal engagement and disengagement. People's motivation to pursue a particular goal depends on situational incentives and personal preferences as well as interactions between these two factors. Ideally, the motivational and volitional regulations of behavior take turns during different behavioral phases and are separated from each other in a clear way. They both ensure in their own way the functional optimization of goal selection, goal striving, and goal realization.¹⁸ According to Sukamadinata, motivation is very important to start doing an activity, because it can have a strong effect on the activity. Besides motivation, the motivation was also influenced by the purpose. The higher purpose, the bigger motivation is more powerful to implement the activity.¹⁸ This is evident during the discussion that children with obesity wanted to have an ideal weight, after play dreall healthy they just known that increasing physical activity was able to help lose weight by reducing playing one of smartphone in a long time. This makes children are encouraged to undertake activities in order to diaphoretic more.

However, this study still has some shortage that can become a consideration for the next researcher to continue for the other research. For next, improving the topic of dreall health not only about sedentary life style but also about other health topic.

CONCLUSION AND RECOMMENDATION

There was an increasing number of children's motivation to increase their activity and reduce sedentary lifestyle after playing the dreall healthy. Fun education might become one method for increasing motivation on children to raise their physics activity.

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COVID-19 Awareness System Based on Risk Assessment (COVID-19 Handling Implementation in Universitas Pekalongan)

Sistem Kewaspadaan COVID-19 Berbasis Penilaian Risiko (Implementasi Penanganan COVID-19 di Universitas Pekalongan)

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ABSTRACT

World Health Organization (WHO) announced COVID-19 as a global pandemic since it occurred massively in the whole part of the world. COVID-19 has an impact on life's aspects, including the academic life aspect. This study aims to assess the risk factors of COVID-19 to build an awareness system of COVID-19 in higher education. This research is qualitative research with a case study approach regarding the risks of COVID-19 at Universitas Pekalongan. Variables were including risk identification, risk analysis, and risk evaluation. Information about the data source, including a university leader, and its vice, acts as a primary informant, the leader of units, and faculty acts as a triangulation informant. Structured-interview was applied to analyze risk identification, and risk analysis, compared criteria and risk impact analyzed the risk of evaluation. This study was conducted from June to August 2020 and held in Universitas Pekalongan. From risk identification and risk analyze there are six results: transmission of COVID-19 with a score of 25, *Tri Dharma Perguruan Tinggi's* activities are not being optimally organized (score of 6), learning competence has not achieved a score of 9, decreased income (score 12), difficulty adapting in mastering internet-based technology (score of 4) and decreased number of new students (score of 12). Refers to risk evaluation risk known that transmission of COVID-19 is the highest-level risk. Risk assessment of COVID-19 impact is developing in the awareness system for comprehensive protection and it's a reference for re-engineering the change strategy in higher education affected by COVID-19.

ABSTRAK

Organisasi Kesehatan Dunia menyatakan COVID-19 sebagai pandemi global sejak menjangkit secara masif di seluruh belahan dunia. COVID-19 berdampak terhadap seluruh aspek kehidupan termasuk akademik. Penelitian ini bertujuan menilai faktor risiko COVID-19 untuk membangun sistem kewaspadaan COVID-19 di perguruan tinggi. Penelitian ini adalah penelitian deskriptif kualitatif dengan pendekatan studi kasus. Variabel penelitian meliputi identifikasi risiko, analisis risiko dan evaluasi risiko. Informan penelitian yaitu pimpinan universitas dan wakilnya sebagai informan utama, pimpinan unit dan fakultas sebagai informan triangulasi. Identifikasi risiko dan analisis risiko dilakukan melalui wawancara terstruktur, evaluasi risiko dilakukan dengan membandingkan antara kriteria risiko dengan dampak risiko. Penelitian ini dilakukan pada bulan Juni hingga Agustus 2020 di Universitas Pekalongan. Berdasarkan identifikasi risiko dan analisis risiko didapatkan enam hasil yaitu penularan COVID-19 (skor 25), kegiatan *Tri Dharma Perguruan Tinggi* belum terorganisir secara optimal (skor 6), kompetensi belajar belum mencapai (skor 9), menurunnya pendapatan (skor 12), kesulitan beradaptasi dalam penguasaan teknologi internet (skor 4) dan penurunan jumlah mahasiswa baru (skor 12). Mengacu pada evaluasi risiko diketahui bahwa penularan COVID-19 merupakan risiko pada level tertinggi. Hasil penilaian risiko COVID-19 ini untuk mengembangkan sistem kewaspadaan sebagai perlindungan komprehensif dan menjadi acuan untuk rekayasa ulang strategi perubahan di perguruan tinggi akibat COVID-19.

INTRODUCTION

For the first time, on December, 31st, 2019, China announced a case of pneumonia etiology was still uncertain. Subsequently, on January, 7th, 2020, it was confirmed that pneumonia cases were caused by a new type of corona-virus called *coronavirus disease* (COVID-19). Clinically, the main signs and symptoms of COVID-19 infection are fever, cough, shortness of breath, sore throat, fatigue, and weakness. On average, the incubation period for Covid-19 is varied, from five to six days, with the most extended incubation period of fourteen days. The coronavirus spreads rapidly between countries causing world unrest, and World Health Organization (WHO) was designated the Public Health Emergency of International Concern on January, 30th, 2020.¹

A study shows the incidences of confirmed COVID-19 outside of China is known to have no travel history from China and may have spread outside China.² Within days, this virus has spread rapidly from Wuhan City to all of Hubei Province and other provinces in China. One of the causes of the rapid spread of corona virus is the density of transportation during the Chinese New Year period on January, 25th, 2020. COVID-19 cases outside China first occurred in Thailand on January, 13th, 2020, then spread quickly and globally.³ The COVID-19 pandemic is a multidimensional problem, namely aspects of the source of transmission, its spread, its impact on various health, social, economic, cultural, religious, and affecting human civilization. The Covid-19 pandemic requires collaboration between governments around the world, WHO, United Nations, health institutions, and international organizations.⁴

Until June 2020 the number of COVID-19 cases in Indonesia reached 32,033 cases, COVID-19 in the world had reached 7 million cases, and the number of deaths reached 1,883 people in Indonesia⁵ The Indonesian government first reported two confirmed cases of Covid-19 on March, 2nd, 2020. Since then, the number of new cases is rising rapidly.¹ Data for COVID-19 in Pekalongan City until June, 14th, 2020, about 17 people were confirmed positive for COVID-19, of which 13 people recovered, 1 person went into self quarantine and three people died.⁶ Data for COVID-19 in Central Java on June, 26th, 2020, the number of positive cases of COVID-19 was 3.559

people and the number of patients under surveillance was 8,444 people.⁷

The COVID-19 pandemic is no longer a health problem because its impact extends to the economic, education, socio-cultural, security, political, and community welfare sectors. Facing this situation requires comprehensive efforts from all aspects and elements of society to cut the transmission of COVID-19 transmission.⁸ The COVID-19 pandemic has a very significant impact on the sustainability of higher education. Higher education is an institution with a large community and a wide area distribution that causes a considerable risk of COVID-19 transmission.⁹ On the other hand, tertiary education institutions have a strategic role in disaster prevention and risk reduction efforts.¹⁰ From a disaster perspective, an early alert system is a primary strategy for controlling the impact of risk-based disasters that arise. This study aims to assess the risk factors of COVID-19 to build an awareness system of COVID-19 in higher education.

MATERIAL AND METHOD

This research was qualitative research with a case study approach regarding the risks of COVID-19 at Universitas Pekalongan. The case study design was selected to obtain a specific picture of the risks posed by COVID-19 for Universitas Pekalongan and to assess risks based on risk assessment techniques. The research was carried out at Universitas Pekalongan in June-August 2020; in that period, the daily COVID-19 cases had exceeded the thousands of cases. During that period, the office cluster cases experienced a significant increase. Research variables consist of risk identification variables, risk analysis variables, and risk evaluation variables. The research was carried out in three stages. The first stage was to identify risks due to the impact of COVID-19; the second stage was to analyze the risk on the causal and effect factors, and the third stage was risk evaluation; the three stages in the risk assessment were carried out prospectively. At the risk identification stage and risk analysis, The data collection was done qualitatively with structured interviews accompanied by environmental observations to obtain an overview of COVID-19 prevention measures at Universitas Pekalongan.¹¹

The research subjects were determined purposively, considering that the subjects had data and information regarding the risk of COVID-19 in their respective units. In this study, research subjects or informants were grouped into two: the main informant, the Chancellor, and Vice-Chancellors 1, 2, and 3; the second informant was the triangulation informant, consisting of the Chairperson of LPMU, Chair of the LPPM, Dean of the Faculty of Health Sciences, Dean of the Teaching Faculty and Science Education, Dean of the Faculty of Agriculture and Dean of the Faculty of Law. In data collection, the researcher acted as the primary research instrument through structured, in-depth interviews. Researchers used triangulation techniques to ensure the credibility and validity of the research data. Two types were used, namely data triangulation and method triangulation. Data triangulation was carried out by in-depth interviews with triangulation informants. Method triangulation was carried out by observing the behavior of implementing health protocols and observing the situation of the campus environment.¹²

This research had been approved by the Health Research Ethics Committee of the University of Pekalongan, Indonesia, and was registered with an Ethical Clearance number 92/B.02.01/KEPK/VII/2020.

RESULTS

This study was limited only to the context of risk assessment, which consists of identifying, analyzing, and risk evaluation. Identification of the risk of COVID-19 at Pekalongan University was carried out by in-depth interviews with informants. These were shown below:

"Unikal juga dihadapkan pada risiko penularan di lingkungan kampus. Risiko yang akan terjadi yaitu tidak tercapainya aktivitas Tri Dharma Perguruan Tinggi secara maksimal yang diselenggarakan secara daring." (I1)

"Ya pasti quality, pasti pencapaian kompetensi itu tidak bisa 100% dari seharusnya." (I2)

"Karena kami khawatir persoalan pandemik ini berdampak pada persoalan keuangan dan daya beli yang akan berakibat pada pemasukan." (I3)

"Katakan kalau kita persentasikan di awal minggu pertama barangkali dosen yang melakukan betul-betul dengan IT yang bagus ya atau melalui daring

minimal dengan SIAKAD 30% bayangkan dari 156 dosen kita hitung di minggu pertama seperti itu." (I2)

"Nah Unikal harus bisa bertahan maka kata kuncinya ada pada penerimaan mahasiswa baru. Mahasiswa baru ini harus bisa sama dengan tahun sebelumnya atau kalau bisa naik." (I1)

The results of the risk identified are presented in Table 1. The risks were identified, namely risk of transmission, Tri Dharma Perguruan Tinggi activities, learning competence, finance, mastery of internet-based technology, and the number of new students. Table 1 also presented the sources of risk and the owner of the risk.

Risk analysis was the second step in risk assessment. The results known that the transmission of COVID-19 had the highest probability and the highest impact.

"Dan itu adalah bukti bahwa kami memperhatikan mahasiswa kami dan peduli terhadap covid." (I3)

"Kalau kita menomorsatukan kompetensi ya tentunya akan berdampak pada ketidaksielamatan." (I2)

"Memang situasinya semakin meruncing ya, Nasional bertambah, Jawa Tengah bertambah, Pekalongan juga bertambah" (I7)

The complete risk analysis results were presented in Table 2. The transmission of covid-19 was a high risk with an extraordinary impact, followed by decreased income and decreased number of new students.

The third step of risk assessment was risk evaluation. The results showed that the risk of COVID-19 transmission was with a very high status.

"Pandemic ini Covid-19 bersifat global dan Indonesia terkena dampak dari Covid-19 dimana dari berbagai informasi yang kita peroleh virus ini tingkat penularannya sangat cepat dan sangat masif. Dan dengan kondisi itu maka dunia pendidikan termasuk juga terkena dampak." (I1)

"Virus inikan kekuatan penyebarannya yang luar biasa" (I6)

"Karena mahasiswa kita banyak yang berasal dari berbagai daerah zona merah masuk ke kampus, Pak Rektor mengkhawatirkan ada klaster baru di Unikal" (I8)

"Kalau risiko itu pasti selalu bisa terjadi, dibuktikan tadi disampaikan bahwa saat ini sudah ada 66 ribu paparan Covid, sehingga dari hari ke hari selalu tambah. Hal ini tentu menjadi kajian kita semua bagaimana

kita untuk tetap mewaspadaai terjadinya paparan Covid” (110)

Table 3 showed a “very high” status indicated that the transmission of COVID-19 in a campus environment was a top priority to be controlled. The results of observations in the Pekalongan University environment were known as follows: there were no theoretical learning activities in the classroom and skill practice in all laboratories. The services of academics and students

were closed and shifted online. The new student registration service was opened with restrictions according to health protocols. Although face-to-face learning was transferred online, at some spots of the campus were still seeing crowds of students. They came to collect assignments and take modules. This situation occurred because not all lecturers mastered the internet-based online learning system.

Table 1. Risk Identification of COVID-19 at Universitas Pekalongan

Identified Risks	Sources of Risk	Risk Owner
Transmission of COVID-19	Coronavirus infection transmission	Lecturers, employees, students, guests
Tri Dharma PT’s activities were not optimally organized	Tri Dharma PT’s activities were held online	Lecturers and students
Learning competence was not achieved	Learning activities (theory and practice) were held online	Students
Decreased income	Decreased ability of students to complete payment obligations	Universitas Pekalongan
Difficulty adapting in mastering internet-based technology	Learning activities (theory and practice) were held online	Lecturers and students
Decreased number of new students	The decreased economic capacity of students/parent	Universitas Pekalongan

Source: Primary Data, 2020

Table 2. Risk Analysis of COVID-19 at Pekalongan University

Identified Risks	Probability		Impact		Level
	Rate	Category	Rate	Category	
Transmission of COVID-19	5	High-possibility	5	Extraordinary	25
Tri Dharma PT’s activities were not optimally organized	3	Mid-possibility	2	Small	6
Learning competence was not achieved	3	Mid-possibility	3	Medium	9
Decreased income	3	Mid-possibility	4	High	12
Difficulty adapting in mastering internet-based technology	2	Small-possibility	2	Small	4
Decreased number of new students	3	Mid-possibility	4	High	12

Source: Primary Data, 2020

Table 3. Risk Evaluation of COVID-19 at Universitas Pekalongan

Identified Risks	Level	Status
Transmission of COVID-19	25	Very High
Tri Dharma PT’s activities were not optimally organized	6	Small
Learning competence was not achieved	9	Medium
Decreased income	12	High
Difficulty adapting in mastering internet-based technology	4	Small
Decreased number of new students	12	High

Source: Primary Data, 2020

DISCUSSION

Continuous efforts that involve all parties' participation are the key to implementing disaster risk reduction in Indonesia with the support of a strong commitment and orientation towards priority actions. One of the five national priorities points to identifying, assessing, monitoring risks and early warning efforts. Community participation in disaster management has been regulated in Law Number 24 of 2007 concerning Disaster Management. Community participation can be done independently or cooperatively from pre-disaster, emergency response, and post-disaster periods by prioritizing risk reduction efforts.

Disaster risk reduction is focused on the pre-disaster period with an emphasis on seven aspects, namely coordination of prevention and preparedness; building an integrated risk reduction system; and allocation of appropriate resources based on a risk analysis. Another aspects are strengthening the integration of early warning systems; strengthening mitigation infrastructure; education and training to increase capacity; expand accurate disaster literacy; and fulfillment of logistics and equipment.¹³ Through an early alert system, the potential of health problems that require public health intervention can be identified earlier.

The implementation of the early alert system is able to increase the capacity of national health system and regional health system based on actual data.¹⁴ Early Warning System was built to provide protection for the community to be able to make efforts reducing risk and impact. These efforts are supported by a data collection and analysis technology infrastructure as part of the decision-making process and a decision analysis model. The implementation of the Early Warning System is adapted to the scope of the disaster and social models.¹⁵ The control of new emerging infectious diseases is carried out across sectors through One Health Policy that integrates cross-sectoral communication strategies at every government level.¹⁶

The risk of mortality and morbidity is higher in disaster areas that do not have a sustainable early warning system. The early warning is a public health protection for communities in hazardous areas. According to the report of UNDR (United Nation for Disaster Reduction) 2006, the

early warning system is broken down into four aspects: risk knowledge, monitoring and warning, dissemination and communication, and response capability.¹⁷

The early warning system is very important in controlling and preventing outbreaks of infectious diseases by detecting the size of the distribution of infectious diseases to determine the risk of an outbreak. The Warning System includes collecting and analyzing of data and information on the spread of infectious diseases to determine an early warning model as a basis for taking preventive and risk reduction policy.¹⁸ In addition to detecting potential health problems, early warning alert response systems strengthen the health system overall.¹⁴

The COVID-19 pandemic impacts various life sectors both medically, socially, politically, economically, religion, culture, and civilization. Its impact is very significant for all human life being around the world and requires study from various fields of science.⁴ The government's effort to reduce the spread of COVID-19 is implementing the policy of social restriction to restrain people's movement, as implemented in many other countries. According to Sayekti, social restrictions can significantly reduce the spread of COVID-19 by up to 60-70%.¹⁹ Referring to Suprayoga Hadi's writing published in *The Indonesian Journal of Development Planning*, it is stated that the academic element in the institutional framework is part of community participation.²⁰

Community participation in risk reduction includes risk recognition, disaster management efforts implemented into a disaster awareness culture, developing an information system for early warning disasters, and disaster mitigation.²⁰ Risk is the result of quantification of hazard and vulnerability and is inversely proportional to risk reduction capacity. Capability shows how much the facilities are provided, both physical and non-physical to minimize risk.²¹ According to the CDC, the main component of public health preparedness is community involvement and partnerships that can be developed at the local and national levels.²²

Coordination and cooperation between the government, international organizations, and civil society are needed in handling COVID-19. Community support and involvement are neces-

sary because the community is the one most affected. It is expected that civil society's participation and the intelligence community can support the government in placing public health insurance as a priority for handling COVID-19 policies.²³ Analysis of response to COVID-19 is carried out to build a future response system of COVID-19 to measure capacity in building a response strategy.²⁴

The campus area is an environment that has a high potential for transmission because there are activities that are carried out together at the same time, and by involving many students from various regions. This condition poses a significant risk of transmitting COVID-19 if it is not adequately controlled. Activities on campus are at significant risk if not controlled due to interactions, crowds of students, and other activities. Another thing that needs to be studied is the risk of transmission that may occur when students are on their way to campus or return from campus. To prevent the spread of COVID-19 in the campus area, all learning activities in higher education are carried out online as a substitute for face-to-face activities.⁵ The COVID-19 alert campus launched by the Indonesian Health Ministry is expected to provide protection for the campus community from the risk of corona virus transmission.⁹

The risk assessment has been regulated in Government Regulation Number 6 of 2008 concerning Government Internal Control Systems. Risk analysis to obtain an idea of how significant a risk is, its likelihood of occurring, and the extent of its impact. In the Government Regulation, it is stated that the risk comes from internal factors and external factors. In contrast, a risk analysis is made to identify the impact of risk on achieving organizational goals. Risk identification can be made using quantitative-qualitative methods. The risk is analyzed based on its relevance to the activity/program/risk organization's objectives and the level of risk concerned.²⁵

Risk assessment is a series of activities that begin with specific and consistent goal setting at the activity and organizational levels. After the objectives are set, the further step is to identify risks that can hinder the achievement of previously established objectives. The results of risk

assessments is a base in decision making to manage risks in support of safety.²⁶

Risk assessment results are used as the basis for formulating risk management and risk control measures to reduce the potential and impact of risks. Risk assessment targets are risks from internal and external sources and other sources that can cause risk.²⁵ Educational institution is obliged to provide safety and health protection for academicians involved in the educational process. Through a risk assessment, it can be identified specifically all the risks that occur due to activities and learning facilities. The results of the risk assessment become a reference in determining preventive action. Several recent studies stated that risk assessment needs to be formulated into a policy in educational institutions based on hazard identification.²⁷

The Indonesian government has designated the COVID-19 pandemic as a non-natural national disaster, and thus in its handling, it applies a disaster approach.²⁸ In response to the COVID-19 outbreak, the priority action taken is to carry out an early warning to reduce the risks and impacts caused by COVID-19. Risk reduction measures by examining and assessing risk through three stages: risk identification, risk analysis, and risk evaluation. The results of risk assessment are the basis for building a risk-based COVID-19 alert system.

Some of the government's efforts to increase awareness of COVID-19 include identifying, isolating, and providing optimal health services for exposed patients. The government also builds risk communication and adequate information for all people to work together to fight COVID-19.²⁹ Risk is defined as an unwanted event that has the potential to occur and has a negative impact.³⁰

Based on Government Regulation Number 60 of 2008, Universitas Pekalongan faces risks caused by the pandemic. The external risks come from these factors: transmission of COVID-19 within the campus environment, decreased income due to unpaid tuition fees, decreasing students in the new term. The third factor exists due to the decline in the community's economic capacity affected by the pandemic, which caused people to delay continuing their studies in college. The internal risk comes from these two factors. First, non-optimal implementation of *Tri*

Dharma Perguruan Tinggi due to the discontinuation of activities that risk of spread of COVID-19. Second, fail to achieve the learning competence and graduate profile due to changes in the implementation learning, from offline to online. Third, difficulties experienced by lecturers in adapting to internet-based technology in online learning.

Risk identification is an activity to discover, identify, and describe risks. The objects of risk identification include risk sources, events, causes, potentials, and consequences. Furthermore, the discovery, identification, and description of risk are obtained from historical data, theoretical analysis, information and expert opinion, and stakeholders' needs. Then, the identification of risks produces called a risk profile. Table 1 lists the risks that affect the achievement of a goal or target at Pekalongan University. Risk identification is carried out to obtain a comprehensive list of risks; a risk that is not identified does not enter the next stage, namely risk analysis.³¹

The second stage of the risk assessment process is risk analysis. This stage aims to understand the nature and level of risk, and the results form the basis for the next stage, namely, risk evaluation. Risk analysis examines the identified risks by considering the causes, sources of risk, the likelihood of occurring, and the resulting impacts, both positive and negative. Risk analysis also considers the multiple impacts of a risk that causes some goals and objectives not to be achieved. Another factor considered in risk analysis is the accuracy of strategies and methods of risk control measures so that control can run effectively and efficiently.³²

The risk analysis result is a risk map presented in Table 2, which contains the types of risks, the probability of events, and the impact of risk. Risk analysis is carried out using quantitative, qualitative methods or combining the two methods tailored to the situation and needs. The risk analysis results in Table 2 show the risk of COVID-19 transmission at level 25, which is the highest score compared to other risks³¹. The campus area is a potential environment for transmission because there are activities carried out together at the same time by involving many people, namely students from various regions.

This condition poses a significant risk of transmitting COVID-19 if it is not adequately controlled.

The pandemic brought significant changes to the implementation of internet-based distance learning to break the transmission chain from person-to-person contact. Online learning is currently beneficial for students to replace face-to-face learning.³² However, not all scientific fields are useful in implementing distance learning because the competencies achieved are skill-based. This rapid change in the learning model is not followed by an adequate learning management system readiness and cannot achieve optimal learning competencies. The COVID-19 pandemic has disrupted the business sector's economic activities and the community's economic activities; this situation has caused people's income to fall and impacted decreasing purchasing power.

Online-based distance learning becomes a problem for students if they have inadequate facilities and infrastructure. Students will have difficulty adapting to new situations because they are used to conventional face-to-face learning. The threat of transmission of COVID-19 is a double burden for students, which causes psychological effects in anxiety disorders. If this situation continues, it can cause difficult learning competence to be achieved.⁵

Risk evaluation is the third stage of risk assessment; the results determine risk treatment and treatment implementation priorities. Risk evaluation is carried out to determine the risk level's comparison with criteria based on a pre-determined context. Risk evaluation refers to data, information, and knowledge-based to formulate decisions about a risk and uncertainty caused by the event under investigated. The decision making process is carried out carefully by considering scientific aspects with scientific evidence.³⁰

The risk evaluation results are presented in Table 3, showing the "very high" risk status for COVID-19 transmission. The transmission of COVID-19 is challenging to prevent and control because it is spread from person to person, especially those who have high mobility. Measures are taken to control COVID-19 in people who have a history of close contact with infected sufferers. The findings continued with a rapid test

and isolation of people caught in contact tracing.³³ Efforts to reduce the campus environment's risk of transmission were carried out by forming the COVID-19 Task Force Team at Universitas Pekalongan. The purpose of establishing the Cluster Team is to facilitate prevention and control activities in the campus environment, including compiling health protocols in the field of *Tri Dharma Perguruan Tinggi*.

Higher education can develop a prevention system in the campus environment and the community by utilizing its resources. Higher education has a strategic role in managing COVID-19 because it has high literacy and the right economic level. Human resources owned by higher education can be empowered to control COVID-19 through *Tri Dharma Perguruan Tinggi* activities.

CONCLUSION AND RECOMMENDATION

The alert system is a priority effort in the prevention and control of COVID-19 at Pekalongan University. The orientation of COVID-19 prevention is risk reduction through risk assessment. This risk assessment results serve as the basis for building an early warning system against risks and impacts that could occur in the campus environment.

The status of the risk of transmission of COVID-19 in the Pekalongan University environment is "very high" because transmission characteristics are easy and fast, especially in environments with large community members from different areas. Controlling COVID-19 is a priority for risk treatment because of the risk of transmission impacts other risks.

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