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Implementation of the Safety and Management System Hospital Working Health (Smk3rs) At "Al Abeer Medical Center Makkah Al Mukarramah"

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ABSTRACT: Occupational Safety and Health in Saudi Arabia is one area that always gets the full attention of the government and non-government officials. Through the National OHS Policy the Government of the Kingdom of Saudi Arabia seeks to strengthen and develop the OSH system, also to support the protection of workers in various workplaces, at the national level through local regulations, international agreements and agreements involving the Kingdom, and global best practices that are compatible with the labor market Saudi work. The general objective of this study, the author wants to describe the

Implementation of the K3RS Management System at the "Al Abeer Medical Center Makkah Al Mukarramah" Hospital. This type of research is quantitative research with descriptive techniques that describe the Implementation of the K3RS Management System at Al Abeer Medical Center Makkah Al Mukarramah Hospital in the Commitment step towards improving and developing K3 and and Setting and monitoring K3 performance indicators. Data collection techniques through questionnaires to 70 respondents using a questionnaire or questionnaire. The results of the descriptive analysis show that the commitment to improving and developing the category is not good. Likewise, K3 arrangements and monitoring of performance indicators related to K3 (Occupational Health and safety) at the "Al Abeer Medical Center Makkah Al Mukarramah Hospital have a not good category.

KEYWORDS: management system, occupational health and safety, hospital

INTRODUCTION

Hospitals as health service institutions for the community have their own characteristics which are influenced by health science, technological advances and the socio-economic life of the community which must continue to be able to improve services that are of higher quality and affordable for the community in order to achieve the highest level of health. Hospitals as a service industry have a variety of complex labor problems with various risks of work consequences and even work-related accidents according to the type of work, so they are obliged to implement safety work (Purba et al., 2018), Hardian., et al (2019); therefore safety culture and safety leadership is the key to implement safety work (Hasanah, et al. 2019)

The Kingdom of Saudi Arabia is experiencing rapid development in the economic and industrial fields. The development of industrial activities is accompanied by the introduction of modern machines, equipment and chemicals that give rise to many chemical, mechanical, physical and other types of risks. This development has led to an increase in the number of factories in various fields of production and a doubling of the number of workers in these factories. However, this has increased the occurrence of occupational injuries and diseases thereby, threatening the current development in the economic and industrial fields. Therefore, awareness of the importance of improving occupational health and safety in the Kingdom of Saudi Arabia t to cope with the steady expansion in the Saudi industrial sector (Saudi Arabia Ministry of Labor, 2009).

Occupational Safety and Health in Saudi Arabia is one area that always receives full attention from the government and non-government officials to ensure safety and health protection for all workers in Saudi Arabia. The main goal of the Saudi Arabian government is to promote a safe and healthy work environment. The Saudi government views this as a religious moral obligation to provide protection for all workers and other related work stakeholders. Cooperation between existing organizations and groups is needed to achieve the 3 goals of Occupational Safety and Health in Saudi Arabia, namely: protecting and improving workers' health and work ability, improving the work environment and work to be safer and healthier, creating work groups and work culture to ensure safety at work. All this will help develop and encourage a new social environment, which will ultimately increase the efficiency of Saudi Arabia's workforce (Khasawneh, 2014).

Through the National OSH Policy the Government of the Kingdom of Saudi Arabia seeks to strengthen and develop the OSH system, as well as to support the protection of workers in various workplaces, at the national level through local regulations,

international agreements and agreements involving the Kingdom, and best global practices appropriate to the labor market Saudi work. The National K3 Policy is based on 5 pillars, namely the principles of the National K3 policy, general objectives and detailed objectives of the National K3 policy, commitment to improving and developing K3, managing K3 and monitoring related performance indicators, as well as developing partnerships at regional and international levels in K3 sector (Human Resources and Social Development Saudi Arabia, 2021). The knowledge and awareness of nurses who have taken part in the ergonomics workshop which focuses on occupational safety and health guidelines related to patient handling, risk assessment and control of Occupational Back Pain (OBP) has greatly increased and the prevalence of OBP in the last 6 months has decreased significantly (Alghadir et al., 2021)

The results of a preliminary study at the "Al Abeer Medical Center Makkah Al Mukarramah" Hospital found that almost all of the workforce had experienced work accidents. The work accident that most often occurs among medical and non-medical personnel is needle sticks, which is around 83%. Information was also obtained that the implementation of the Occupational Safety and Health Management System at Al Abeer Medical Center Makkah Al Mukarramah Hospital is already underway but has not been implemented optimally. In terms of the hospital's commitment to improving and developing K3, various regulations relating to K3RS have been stipulated in writing by the leadership and socialized in the hope that all employees at the hospital can know them clearly and are easy to understand. However, we need to know that those in the hospital are not only working employees, but there are patients, patient families, guests or other people who have an interest in the place. Only around 65% are exposed to information about K3RS policies. What is often forgotten is that everyone must also know the policies related to K3RS. The overview of K3 regulation and monitoring of performance indicators related to K3 is actually good, namely that SOPs for each action already exist, but these SOPs have not been socialized or communicated to targets.

Apart from that, existing SOPs should be updated periodically in accordance with applicable laws and regulations and conditions occurring in the field. The K3RS Committee should plan the K3 program and implement K3 risk control so that the KAK and PAK numbers can be reduced or even reduced. From initial studies, this step has not been implemented optimally by the K3RS committee, so the incidence of CAC and PAK still occurs at 30% and 20%. Inspection and inspection activities of workplaces and working methods have not yet been carried out on a scheduled basis, even though with this step detailed data will be obtained about the real conditions of the hospital. The K3RS committee team must also report its findings to the leadership, from these results several performance indicators will be known such as a reduction in KAK and PAK, a reduction in employee absenteeism and an increase in performance productivity. It is hoped that with the research that will be carried out, we will know in detail the implementation of the K3 Management System at "Al Abeer Medical Center Makkah al Mukarramah" Hospital so that it can be used as evaluation material for SMK3RS in the future. To build ergonomically safe working conditions, a program is very necessary. Proper Occupational Safety and Health.

The general aim of this research is that the author wants to describe the implementation of the K3RS Management System at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital. Meanwhile, the specific objectives of this research are:

- 1. Describe the commitment to improving and developing K3 at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital.
- 2. Describe the overview of K3 and monitoring performance indicators related to K3 at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital.

RESEARCH METHODS

The method used in this research is a quantitative approach with a descriptive technique, namely by describing or describing the data found as is, which was carried out at Al Abeer Medical Center Makkah Al Mukarramah. Data collection in this research was carried out in January 2023. In this research, samples were taken using Nonprobability Sampling, namely a type of purposive sampling technique. This sampling technique takes certain considerations into account. The sample in this study was medical and paramedical personnel who were directly involved in health services at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital, totaling 70 respondents consisting of 15 departments. The research variables consist of respondent characteristics which include age, gender, type of workforce, education, length of service and country of origin. Meanwhile, the SMK3RS Implementation variable consists of commitment to improving and developing K3 and setting and monitoring K3 performance indicators. The instruments that will be used in this research are questionnaires and checklists. The research instrument uses parts of the Saudi Arabia Environment, Health & Safety Profile and Checklist (2014) and several modifications from related research, namely research by Syahrawati (2019), Mufidah (2021), Novianti (2014).

The first section contains data on the characteristics of the respondent (age, gender, type of workforce, education, years of service and national origin of the respondent). The second part contains statements to measure the implementation of SMK3RS, namely improving and developing K3, setting and monitoring K3 performance indicators. The measurement aspects of SMK3RS implementation variables are explained in more detail in the following table:

Table 1. Measurement Aspects of SMK3RS Implementation Variable

Variable Aspects ofMinimum SMK3RS Implementation Value Weight	Maximum Value Weight	Sub Variable	N	Ieas	suren	nent	Percenta	ıge
		Category	R	esp	onse	Score		
Commitment to improving10 and developing K3	150	Not good Good	1: :	10	35 -	34 44	<69% 88%	70-
		Very good	:	45	-	50	>90%	
Setting and monitoring K3 10 performance indicators	50	Not good Good	1: :	10	35 -	34 44	<69% 89%	70-
		Very good	:	45	-	50	>90%	
		Not good	:	20	-	69	<69%	
Implementation of SMK3RS 20	100	Good	:	70	-	89	70-89%	
		Very good	:	90	-	100	>90%	

The data collection technique in this research uses questionnaires. Before starting to fill out the questionnaire, the researcher asked respondents for informed consent first. The data analysis technique in this research goes through several stages, namely Editing, Coding, Tabulating, Data Entry, Processing, Cleaning, Data Analysis and Interpretation.

RESULTS AND DISCUSSION

The respondents in this study were medical and paramedical personnel who were directly involved in health services at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital, totaling 70

respondents consisting of 15 departments. The description of the respondents observed includes age, gender, education, type of work, length of work and national origin of the respondents which are explained in table 2

Table 2. Characteristics of Respondents

No.	Characteristic <u>s</u>		Frequency	Percentage (%)
1	Age	20-35 years old	16	22,9
		36-45 years old	42	60
		45-65 years old	12	17,1
2	Gender	Man	31	44,3
		Woman	39	55,7
3	Types of labor	Medical	12	17,1
		Paramedic	58	82,9
4	Level of Education	D3	19	27,1
		S1	36	51,4
		S2	3	4,3
		Specialist	10	14,3
		Sub Specialist	2	2,9
5	Year of Service	1-5 years	26	37,1
		6-15 years	35	50
		16-25 years	9	12,9
		> 25 years	0	
6	Citizenship	Indonesia	8	11,4
		Saudiarabia	22	31,4
		Pakistan	15	21,5
		India	14	20
		Filipina	11	15,7

From Table 2 it is known that the majority of respondents are aged 36-45 years, namely 60%, female workers dominate the workforce at this hospital, namely 55.7%, although there is only a slight difference from male workers. Most of the respondents were paramedics (82.9%) with a Strata 1 educational background (51.4%). Workers with 6-15 years of work experience were the largest number of respondents in this study (50%), and most of the workers came from Saudi Arabia itself.

Table 3. Commitment to K3 Improvement and Development

No.	Citizens hip	Average Score	Percenta ge (%)	Catego ry
1.	Saudi Arabia	32,72	65,44	Not good
2.	Indonesia	42,54	85,08	Good
3.	Pakistan	32,80	65,60	Not good
4.	India	30,15	60,30	Not good
5.	Filipina	38,76	77,52	Good
Total Average Commit	ment to K3	35,39	70,78	Not good
Improvement and evelopment				_

Table 3 shows that in general workers' commitment to improving and developing K3 is in the poor category, but there are those who show a good category, namely workers who come from Indonesia. Commitment is a form of dedication or binding obligation that must be carried out, in this case all elements in the hospital should have had a commitment from the start to carry out their obligations, especially in improving and developing K3. This not only controls various risks of accidents at work, but if accident occurs it can result in material or asset losses for the institution itself. The implementation of SMK3RS is an effort to ensure the consistency and effectiveness of hospitals in controlling sources of danger. Apart from that, it can minimize risks that are likely to occur, prevent accidents and illnesses caused by work and maximize hospital efficiency which ultimately can increase hospital competitiveness. Through consistent and efficient implementation of SMK3RS, undesirable events or losses can be prevented.

The research results show that in general workers' commitment to improving and developing K3 is in the poor category, but there are those who show a good category, namely workers who come from Indonesia. Research by Jajang, et al (2018) shows that the implementation of SMK3 is still minimal because many workers believe that work safety is not very important, and also awareness from workers and companies about the dangers of work accidents is very lacking and implementation by companies is still not strict enough. Candra, Sien and Astawa (2018) stated that the obstacles that often occur in implementing SMK3 range from limited funds, low priority of K3 by company management and low culture and discipline. Tannya, Pingkan and Jantie (2017) experienced obstacles in implementing SMK3 due to a lack of training regarding SMK3, companies considered that implementing SMK3 would increase costs for the company.

Kurnia's research (2020) suggests that the factors causing the lack of implementation of SMK3 in hospitals are compliance with statutory regulations, commitment to K3 policies, humans and the environment, budget or finance and support from the government. The factor of low commitment to K3 policy itself is due to the company's lack of firmness in implementing sanctions for rule violators who cause workers to repeatedly make mistakes (Wiratmani, 2010) and the lack of priority in overcoming K3 policies (Dharmayanti, 2018).

Research by Suresh, et al (2017) states that the implementation of improvements in safety and health standards has been carried out but needs further improvement. What can be done to increase the commitment of all existing elements is to increase knowledge and awareness of the importance of K3 so that it will influence good behavior, apart from that, it is also mandatory to organize and involve workers to take part in training related to K3. This is in accordance with research by Alghadir et al (2021) which states that the knowledge and awareness of nurses who have taken part in an ergonomics workshop which focuses on occupational safety and health guidelines related to patient handling, risk assessment and control of Occupational Back Pain (OBP) has greatly increased and the prevalence of OBP in the last 6 months has decreased significantly. In other words, with increased knowledge, the workforce will have an awareness of the importance of implementing commitments in improving and developing K3.

In fact, the Kingdom of Saudi Arabia, through the Ministry of Human Resources and Social Development, is committed to improving worker protection from occupational safety and health hazards, and making workplaces more attractive through regional and international best practices. The Ministry is also committed to working with government institutions related to K3 to define roles and responsibilities and integrate efforts to achieve efficient performance from human, technical and financial resources. The Ministry will also work to define the roles and responsibilities of all stakeholders covered by OSH regulations and laws, such as employers, workers, suppliers and manufacturers of machinery and equipment, in consultation with the three social partners (government agencies related to OSH, employer and employee representatives), with a view to taking the necessary measures and ensuring their implementation.

In addition, the Ministry will periodically review and update the National Policy to improve K3 procedures and regulations to prevent and reduce work accidents, injuries, work-related illnesses and deaths at work. This will be done through consultation and coordination with the relevant authorities. In addition, work to improve suggestions that improve regulations related to OSH, prepare training programs to build and develop national capabilities in the field of OSH on an ongoing basis, help increase workers' awareness of the necessary measures of OSH to protect them from workplace diseases and hazards work, this will also include program development, and promotion of safety culture (Human Resources and Social Development Saudi Arabia, 2021). From this good policy, the next most important step is how to increase awareness of all elements in a hospital to behave according to standards.

Table 4. K3 Settings and Monitoring of Performance Indicators related to K3

No.	Citizenship	Average Score	Percentage (%)	Category
1	Saudi Arabia	26,74	53,48	Not good
2	Indonesia	30,33	60,66	Not good
3	Pakistan	28,97	57,94	Not good
4	India	25,98	51,96	Not good
5	Filipina	31,32	62,64	Not good
Total Average K3 Settings and Monitoring of Performance Indicators related to K3		28,67	57,34	Not good

Table 4 shows that the K3 arrangements and monitoring of performance indicators related to K3 at Al Abeer Medical Center Hospital carried out by workers both from within their own country and from other countries are not good category.

The research results show that the K3 arrangements and monitoring of performance indicators related to K3 at Al Abeer Medical Center Hospital carried out by workers both from within their own country and from other countries are in the poor category. According to Cooper (2019), the implementation of K3 in an organization is influenced by workers' beliefs, perceptions and attitudes. Selfconfidence can originate from experiences of success, experiences of other individuals, verbal persuasion and individual physiological states (Smet, 2018).

Khalid's research (2021) explains that effective implementation of OSHMS is influenced by the implementation of K3 regulations, leadership, K3 planning, compliance with K3 regulations, performance measurement, risk assessment, safety inspections and safety culture. This research is in line with research from Balkyour, et al (2019) which concluded that worker awareness of the use of PPE as an element of K3 is still very low, namely only around 8-50% of workers use PPE. As a result, workers are exposed to various physical, chemical hazards and accidents in small-scale industries, including exposure to noise, dust, steam and direct sunlight.

This is different from research from Khasawneh, et al (2014) which states that the implementation of the K3 program will help develop and encourage a new social environment, which will ultimately increase the efficiency of the Saudi Arabian workforce. K3 arrangements and monitoring of performance indicators related to K3 are carried out through SOPs for each action that is in place, then socialized or communicated to targets. SOPs must be updated periodically in accordance with applicable laws and regulations and conditions occurring in the field. K3RS related officers are also required to plan K3 programs and implement K3 risk control so that KAK and PAK numbers can be reduced or even reduced. Inspection and inspection activities of workplaces and work methods must be closely monitored so that the real condition of the hospital can be known.

The Ministry of the Kingdom of Saudi Arabia always consults with K3 partners and related government institutions in monitoring, following up and evaluating K3 performance. This will be achieved through the development of strategies that are in line with agreed work standards. This will also involve the provision of information, guidance and advice to both employers and workers on matters relating to compliance with regulations and laws, taking into account the imposition of statutory penalties for perpetrators of OSH related offences.

The Ministry also plays a role in implementing K3 governance at the national level, determining and coordinating the roles of relevant government institutions, and following up on the implementation of national K3 policies. This will be achieved through the establishment of a National Council for Occupational Safety and Health, under the jurisdiction of the Honorable Minister of Human Resources and Social Development, with membership including representatives from relevant authorities on K3, while ensuring that the Council will be able to carry out its role with high efficiency, in related areas K3. (Human Resources and Social Development Saudi Arabia, 2021).

From the results of the research that has been carried out, in the Commitment to Improvement and Development of K3 step, first it is necessary to hold regular meetings to determine agreement on each existing policy in the hospital between K3RS officers, managers and workers so that the commitment of each element in the hospital has been agreed at the beginning, and carry out socialization. Second, the workforce needs training, seminars and workshops on basic safety, both in house training and taking them outside the hospital. Third, facilities and infrastructure, especially those related to K3, are always monitored so that they function properly and as they should, as well as the adequacy of PPE. Meanwhile, in the steps of K3 Regulation and Monitoring Performance Indicators related to K3, first there is the implementation of a safety culture by all workers in the hospital and other interested parties. Second, carrying out SMK3RS activities in accordance with established regulations, so that every action runs normally and no party is harmed. Third, every worker must receive periodic health check facilities to ensure that workers' health is guaranteed. Fourth, management of K3RS facilities, such as sticking K3 posters that are easily visible and placed in the appropriate place and SOPs for each action must be in place, implemented and evaluated periodically, for example once every 6-12 months. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research conducted by the author, it can be concluded that the results of this research are in several ways, as follows:

- 1. The research results show that the commitment to improving and developing K3 at "Al Abeer Medical Center Makkah Al Mukarramah" Hospital is not good category.
- 2. An overview of K3 arrangements and monitoring of performance indicators related to K3 at Al Abeer Medical Center Makkah Al Mukarramah Hospital which is not good category.

Based on the results of the research conducted, researchers can provide the following suggestions:

1. For Hospitals

- a. Hospitals are obliged to hold meetings with workers regarding hospital policies, especially regarding SMK3RS every 3-6 months to evaluate and socialize if there are new policies.
- b. Involving workers in training activities or workshops on K3, for example through in-house training every 6-12 months.
- c. Carry out a periodic health check program for all workers at the hospital, so that the condition of the workers is known during work, for example at the beginning and middle of the year.
- d. The K3RS team must maximize monitoring and evaluation of the implementation of SMK3RS so that the workforce safety program and all elements in the hospital can become part of improving service quality.
- e. Conduct benchmarking once a year to other hospitals, so that you can gain experience and input for a better SMK3RS.

2. For Health Workers

- a. All health workers, both medical and paramedical, are obliged to create and implement services according to existing SOPs so that the safety of patients and health service providers is achieved.
- b. Medical and paramedical personnel must be willing to improve their knowledge and skills through seminars, training and workshops both held by the hospital itself and training in other areas related to K3, especially SMK3.

3. For Further Researchers

- a. Future researchers are advised to research other activities within the scope of SMK3RS, so that they can find out in detail which activities need to be improved and implemented up to reevaluation to determine future actions.
- b. K3RS officers need to be involved as respondents in research, so that their role in implementing SMK3RS can be known.

REFERENCES

- 1) Abidin, Z. (2022). Analisis Faktor yang Mempengaruhi Penerapan Keselamatan dan Kesehatan Kerja di RSUD TAIS Kabupaten Seluma Tahun 2022. Jurnal Pendidikan dan Konseling, 1754-1770.
- 2) Alahmadi, H. A. (2010). Assesement of patient Safety Culture in Saudi Arabian Hospitals. Qual Saf Health Care, 1-5.
- 3) Alghadir, A. H., Al-Abbad, H., Buragadda, S., & Iqbal, A. (2021).
- 4) Iinfluence of Work- Related Safety and Health Guidelines on Knowledge and Prevalence of Occupational Back pain among Rehabilitation Nurses in Saudi Arabia: A 6-Month Follow-Up Stud Almousah, N., Althabet, N., AlSultan, S., Albagmi, F., Alnujaidi, H., & Salama, K.
- 5) F. (2022). Occupational Safety Climate and Hazards in Industrial Sector: Gender Difference Perspective, Saudi Arabia. Frontiers in Public Health, 1-9.
- 6) Alnaami, I., Awadalla, N. J., Alkhairy, M., Alburidy, S., Alqami, A., Algami, A., . .Mahfouz, A. A. (2019). Prevalence and Factors Associated with Low Back Pain among Health Care workers in Southwestern Saudi Arabia. BMC Musculoskeletal Disorders, 1-7.
- 7) Asad, M. M., Hassan, R. B., Sherwani, F., Rind, A., & Maiji, Y. (2019). Development of Novel Safety and Health Educational Management Information System (HAZ-PRO) for Oil and Gas Production Operation. Journal of Engineering, Design and Technology, 1-13.
- 8) Balkhyour, M. A., Ahmad, I., & Rehan, M. (2018). Assement of Personal Protective Equipment Use and Occupational Exposures in Small Industries in Jeddah: Health Implications for Workers. Saudi Journal of Biological Sciences, 653-659.
- 9) Development, H. R. (2021). The National Policy On Occupational Safety and Health For The Kingdom of Saudi Arabia. Saudi Arabia: Human Resources and Social Development.
- 10) Dharmayanti, G., Pramana, G., & Diputra, D. (2018). Kendala Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Kontraktor di Bali. Jurnal Teknik Sipil Udayana, 12-16.
- 11) Handayani, R. (2020). Metodologi Penelitian Sosial. Yogyakarta: Trussmedia Grafika.
- 12) Hasanah, N., Kholil, Sugiarto. 2019. Analysis the Effect of Leadership to Safety Climate, Safety Culture and Safety Performance. Asian Journal of Advanced Research and Reports 4(2): 1-12,

- 13) Hardian,C; Kholil and S. Abdullah. 2019. AHP Method for Selecting the Best Strategy to Enhance Safety Culture: A Case Study at "XYZ" Company in Qatar. Current Journal of Applied Science and Technology. 37(1):1-12. DOI: 10.9734/CJAST/2019/v37i230282
- 14) Khalid, U., Sagoo, A., & Benachir, M. (2021). Safety Manajement System (SMS) Framework Development-Mitigating the Critical Safety Factors Affecting Health and Safety Performance in Construction Projects. Safety Science.
- 15) Khasawneh, A. (2014). Improving Occupational Health and Workplace Safety in Saudi Arabia. International Journal of development and Sustainability, 261- 267.
- 16) Kurnia, M. B. (2020). Faktor- faktor Penyebab Rendahnya Penerapan system Manajemen Keselamatan dan Kesehatan Kerja (SMK3) pada Perusahaan Bidang Pekerjaan Konstruksi. Jurnal Student Teknik sipil, 2, 141-146.
- 17) Mufidah, U. (2021). Evaluasi Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) di Rumah sakit TGK.Chik Ditiro Sigli. Banda aceh: Universitas Islam Ar-Rainy Darussalam Banda Aceh.
- 18) Novianti, S. (2014). Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) dengan Kejadian Kecelakaan Kerja di Treat and Ship Operations-Facility Operations PT. Cevron Pacific Indonesia Duri. Sumatera Utara: Universitas Sumatera Utara.
- 19) Priyono. (2016). Metode Penelitian Kuantitatif.
- 20) Sidoarjo: Zifatama Publishing.
- 21) Siyoto, S., & Sodik, M. (2015). Dasar Metodologi Penelitian. Yogyakarta: Literasi Media Publishing. Sugiyono. (2018). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta. Sugiyono. (2018). Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta.
- 22) Syahrawati. (2019). Pengaruh Penerapan Sistem Manajemen Keselamatan dan Kesehatan Kerja (SMK3) terhadap Tinggkat Kecelakaan Kerja di PT.Triteguh Manunggal Sejati Kabupaten gowa. . Makassar: Universitas Muhammadiyah.
- 23) The Isosceles Group 50 Congress, S. B. (2014). Saudi Arabia Environment, Health & Safety Profile and Checklist. Saudi Arabia: The Isosceles Group 50 Congress, Street Boston, MA 02109.
- 24) Wiratna, A. Y. (2021, April). The Influence of Workload Factors, Work Stress and Health Personnel Competency on the Implementation of Hospital Occupational Safety and Health Management Systems (SMK3RS). Journal of Nursing Practice, 281-293. Retrieved from http://thejpn.org
- 25) Wiratnami, E. (2010). Analisis Manajemen Keselamatan dan Kesehatan Kerja (K-3) pada Bagian Pressing di PT.X. Universitas Indraprasta PGRI.