

The Correlation Of Unsafe Action And Unsafe Condition On Work Accident Among Nurses At Dr Tadjuddin Chalid Hospital Makassar

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ABSTRACT

Nurses working in hospital settings face a heightened susceptibility to work-related accidents, which primarily stem from two underlying factors: unsafe behaviour and hazardous conditions. Work accident data at Dr Tadjuddin Chalid, there are 12 reported cases of work accidents in 2021. The objective of this study was to establish the correlation between unsafe actions, unsafe conditions, and the frequency of work accidents among nurses at Dr Tadjuddin Chalid Makassar Hospital. The research methodology employed for this investigation was observational, adopting a cross-sectional approach. The targeted population encompassed 205 individuals, with a final sample size of 136 nurses being involved in this research endeavour. The sample is taken using a simple random sampling method. Respondent data collection using a questionnaire. Data analysis used the chi-square test to see the relationship between independent variables, namely unsafe actions (perceptions, work experience, work stress, work shifts and supervision) and unsafe conditions (work environment, tools/materials and dangerous unsafe environment) with the occurrence of work accidents. The findings indicated a notable correlation between unsafe behaviour and work accidents ($p\text{-value} = 0.001$), alongside a significant relationship between unsafe conditions and work accidents ($p\text{-value} = 0.007$). In summation, it can be concluded that both unsafe behaviour and unsafe conditions are connected to the incidence of work accidents at Dr- Tadjuddin Chalid Makassar Hospital. It is recommended that the hospital emphasizes enhancing the work environment's conditions and elevating the quality of training and supervision. These measures are essential for mitigating the prevalence of work accidents among nurses.

Keywords: Unsafe action, unsafe conditions, work accidents

INTRODUCTION

The hospital functions as a crucial component in the provision of healthcare, operating as an open system that consistently engages with its surroundings to establish a harmonious equilibrium. Its primary role revolves around catering to individuals seeking medical assistance. To ensure the delivery of top-notch healthcare within the hospital premises, the availability of high-quality resources is imperative. By effectively utilizing the resources at hand, the hospital aspires to generate optimal outcomes in the form of enhanced service provisions. Addressing these challenges necessitates the recognition that the hospital's triumph is, to a certain extent, attributed to its human resources. Thus, the personnel are deemed invaluable assets and viewed as investments, particularly when their skill sets are advanced (1).

The success of hospital services is inseparable from various factors of nursing services which are commonly called nursing care. The hospital is a health service institution that provides complete individual health services including outpatient, inpatient, laboratory and emergency care. Hospitals encompass environments that harbour diverse potential dangers capable of posing risks to occupational safety and health. These risks extend beyond merely affecting the immediate personnel within the hospital; they also extend to patients, visitors, and the neighbouring community (1).

According to the National Safety Council report that work accidents often occur in health workers, which is 41% greater than in other industrial workers (2). All facilities and equipment can be a potential source of health and safety hazards if health workers work not by occupational health management standards and safety procedures (3). This is because the criteria for workplaces in healthcare facilities have various potential hazards that impact health and safety, resulting in health workers being vulnerable to accidents and occupational diseases (4).

The Employment Statistics Bureau in its report revealed that there was a 19.2% injury rate for nurses and 3.7% for other health workers. And most of the 68.5% of nurses in the world have experienced at least one work accident and 15.9% have had a work accident within a week with the most frequent injury being a needle stick injury, followed by slips and falls (5). According to the Indonesian Ministry of Health (2011) in Fatmawaty Mallapiang et al. (2019), this injury is also experienced by nurses in several countries, one of which is the United States, where according to the results of the American Nurses Association (ANA) report, injuries due to needle sticks are more common by 64%. The Centers for Disease Control and Prevention (CDC) estimates that hospitals in the United States often experience 385,000 injuries to health workers each year due to blood-contaminated sharp objects (6). Meanwhile, based on the Massachusetts Department of Public Health (MDPH), health workers often suffer injuries from sharp objects including needles, including 1,105 doctors, 1,124 nurses, 456 technicians, 114 service departments, 11 dental staff, and 66 other health staff (7).

One country in Asia where the rate of work accidents is still fluctuating, namely Indonesia (8). According to the Decree of the Minister of Health of the Republic of Indonesia No. 1087/MENKES/SK/VIII/2010 concerning Occupational Health and Safety Standards in Hospitals (2010) in Indri Meilawati et al. (2019), especially for health workers, being stabbed by a syringe is also the most common injury. This can be seen from the total number of health workers experiencing an increase in injuries of 38-73% or 95 to 182,000 out of 250,000 nurses who have experienced these injuries (9). This is in line with Azizah Khoiriyati & Novita Kurnia Sari's (2016) in their research which found that health workers often experience needle sticks by 54.6%, slip and fall by 14% and 5%, run over by gurney wheels and oxygen cylinders by 9% and 7%, and electrocuted by 4% and several other accidents (10). In addition to needle sticks, other injuries that often occur in midwives, laboratory assistants, nutrition and radiology are cut ampoules by 19.14%, pinched by 4%, falling by 8.51%, hit by a falling object by 6.38% and other injuries (11).

According to Domino Heinrich's theory that 80-85% of unsafe actions and 10-15% of unsafe conditions can cause work accidents, so unsafe actions have the most contribution to the occurrence of work accidents. This is also in line with the research of Joko Pitoyo et al. (2017), that at work, nurses carry out unsafe actions by 54.5% or 54 people and carry out unsafe conditions by 25.3% or 25 people (12).

Certain unsafe actions or errors committed by healthcare personnel lead to injuries, specifically instances where the work conducted deviates from occupational health management standards and safety protocols (3). Not using Personal Protective Equipment (PPE) such as gloves, being in a hurry when working so you don't pay attention to the caution which results in injuries such as slipping, cutting and even hitting several items, misplacing or throwing away used syringes, and lack of health workers skilled (13). As for unsafe conditions such as the unavailability of puncture-resistant sharps disposal sites, and the availability of Personal Protective Equipment (PPE) which runs out quickly re-supply is sometimes too late to do (2). These two factors, as it appears, directly impact the occurrence of injuries and near misses. Consequently, they emerge as immediate triggers for workplace accidents (6).

An accident is a series of events caused by factors or potential hazards which are interrelated. The International Labor Organization (ILO) states that at least 2.78 million workers die every year due to work accidents and work-related diseases. Based on the number of cases, the number of work accidents reached more than 380,000 (3.7%) (14).

In Indonesia, data related to the incidence of work accidents in hospitals for health workers have not been properly recorded. Whereas cases of Occupational Diseases among health workers were 83.3% of workers in the central surgical installation of a regional public hospital in Jakarta in 2006. Based on research on a thesis by Laurent Auzoult & Robert Ngueutsa (2019), showed that as many as 18 workers (56.2%) had a high risk of unsafe behaviour and 14 workers (43.8%) had a low risk of unsafe behaviour (15).

Dr Tadjuddin Chalid Makassar General Hospital is a hospital that was originally called the Ujung Pandang Leprosy Hospital which was officially established on December 24, 1982, based on the decision of the Minister of Health of the Republic of Indonesia Number 568/Menkes/SK/1982, which subsequently, along with the development of services, regulations were formed Minister of Health of the Republic of Indonesia Number 60 of 2019 concerning the organization and work procedures of the Dr Tadjuddin Chalid Makassar Hospital as a Type B General Hospital and Dr Tadjuddin Chalid Makassar has been led by 7 (seven) Directors.

Based on the initial survey, it was found that the Hospital Occupational Health and Safety at the Dr Tadjuddin Chalid Makassar Hospital had been running independently for about 1 year based on the Minister of Health Regulation Number 47 of 2020 concerning the organization and work procedures of the Dr Tadjuddin Chalid Hospital Makassar, which previously Hospital Occupational Health and Safety joined the Environmental Health Installation. It is known that based on data on work accidents at Dr Tadjuddin Chalid Hospital, there were 12 reported cases of work accidents, while 3 reported cases of occupational diseases.

Based on secondary data (initial data) the number of nurses is 205 people. In cases of work accidents that occurred at Dr Tadjuddin Chalid 12 Hospital, those who reported to the Hospital Occupational Safety Center included nurses and doctors who were punctured by a needle, sliced through an ampoule, pinched, slipped and fell. Then Infection Control and Prevention found data on reports of needle stick incidents in 2018 of as many as 4 people, in 2019 as 4 people, in 2020 as many as 6 people and in 2021 as many as 12 people.

Building upon the aforementioned context, the researcher finds a vested interest in pursuing additional investigation concerning "insecure behaviour and precarious conditions contributing to job-related mishaps among nurses at Dr Tadjuddin Chalid Makassar Hospital." Consequently, this study seeks to establish the correlation between unsafe behavioural patterns and hazardous circumstances in the emergence of work-related incidents among nurses at Dr. Tadjuddin Chalid Makassar Hospital.

METHODS

The methodology employed in this study is observational and utilizes a cross-sectional approach, intended to explore the connection between independent and dependent variables. The cross-sectional approach involves gathering data for both the independent and dependent variables simultaneously. The study centres on investigating the dependent variables: unsafe behaviour and unsafe conditions while considering work accidents among nurses at Dr Tadjuddin Chalid Makassar Hospital as the independent variable. This research was conducted within the inpatient ward of Dr Tadjuddin Chalid Hospital in Makassar City. This research was conducted from August to September 2022. The population in this study were all nurses at Dr Hospital. Tadjuddin Chalid, Biringkanaya Sub-District, Makassar City, has as many as 152 prospective Civil Servants nurses and 53 non-Prospective Civil Servants nurses. So the total

number of nurses in Dr Tadjuddin Chalid Hospital is 205 nurses. While the sample in this study is part of the population that is used as the object of research, in words the sample is partly representative of the population. The research sample is the nurses at Dr Hospital. Tadjuddin Chalid Makassar. Determination of the number of samples was calculated based on the Slovin sample formula so that a total sample of 136 people was obtained (16).

The data used in this study were obtained through data collection in the form of primary data and secondary data. Primary data was obtained by conducting a direct survey to obtain data that was not obtained from the local health centre. To obtain data, an observation or a direct observation was carried out. In addition, a questionnaire was also used to look at risk factor variables that were considered related to the influence of unsafe behaviour and unsafe conditions on the occurrence of work accidents in nurses at the hospital. Data collection was carried out directly by researchers by conducting interviews. Meanwhile, secondary data was obtained from institutions or other parties that could be trusted, namely data from hospitals Dr Tadjuddin Chalid, Makassar City.

Processing and analysis of data in this study using a computer program. The data processing entails several sequential phases, encompassing the following: 1) Editing. The results of interviews, questionnaires or observations from the field must be edited first. In general, editing is an activity to check and correct the contents of the form or questionnaire; 2) Coding. After all the questionnaires have been edited or edited, coding is then carried out, namely changing data in the form of sentences or letters into numeric or numeric data; 3) Data entry. Implementation of data entry is carried out first by creating a data entry program on a computer program according to the variables studied to facilitate the process of analyzing research results. Furthermore, the data that has been collected from the results of the questionnaire is entered (entry) into the computer based on the data entry program that has been made before; 4) Cleaning. Re-checking the data in the computer program in the form of a frequency distribution table to ensure that there are no errors in data entry; 5) Scoring. After the data has been corrected and errors corrected at the time of filling, a score is then given for each research variable to make it easier to identify the research variables and then categories are carried out based on the average value of each variable. After analyzing the data, the findings are presented through tables and narratives to facilitate a comprehensive discussion of the research outcomes; 6) Categorization, scoring variables are grouped based on the answer score, namely the good category if you get an average score of $\geq 50\%$ of the total answers.

Analysis of the data used in this study with univariate analysis and bivariate analysis. Univariate analysis was carried out on each variable from the research results using a frequency distribution table to produce the distribution and percentage of each variable in this study. Meanwhile, bivariate analysis was carried out to determine the relationship between the dependent and independent variables in the form of cross-tabulation using a computerized system with the Chi-Square statistical test.

The research has successfully undergone the examination process of the research protocol and has been granted an Ethics Review Certification by the Health Research Ethics Committee of the Faculty of Public Health, University of Pejuang Republic Indonesia, under Reference No: 1703-KEPK-FKM-UPRI.

RESULTS AND DISCUSSION

Univariate analysis

This analysis is utilized to provide a descriptive examination of each variable, to elucidate the distinctive traits inherent to each variable.

Characteristics of Respondents

Table 1 Presents the Attributes of Participants categorized by Age Group, Years of Service, and Educational Background among Nurses at Dr- Tadjuddin Chalid Hospital, Makassar, in the year 2022.

Characteristics of Respondents	Frequency (n)	Percent (%)
Age Group (Years)		
25-40	85	62.50
41-56	51	37.50
Years of service		
1-15	89	65.44
16-30	47	34.56
Level of education		
Diploma Three (D3)	55	40.44
Diploma Four (D4)	33	24.27
Bachelor degree	36	26.47
Masters (S2)	12	8.82
Total	136	100.0

Source: Primary Data, 2022

From the data presented in Table 1, it is evident that out of the 136 participating nurses, the predominant age group falls within the 25-40 years range, encompassing 85 individuals (62.5%). Moreover, in terms of years of service, the majority of respondents have accumulated 1-15 years of experience, totalling 89 individuals (65.44%). Lastly, regarding the highest level of education attained, the highest number of respondents have completed a Diploma 3 degree, amounting to 55 individuals (40.44%).

Description of the Variables Researched

Table 2 illustrates the Frequency Distribution of Variables encompassing Unsafe Behavioral Actions, Hazardous Conditions, and Work-Related Accidents among Nurses at Dr- Tadjuddin Chalid Hospital, Makassar, in the year 2022.

Research variable	Frequency (n)	Percent (%)
Unsafe Behavior (Unsafe Action)		
Well	60	44.12
Not enough	76	55.88
Perception		
Well	55	40.44
Not enough	81	59.56
Work experience		
Well	66	48.53
Not enough	70	51.47
Work Stress		
Light	58	42.65
Currently	78	57.35
Shift work		
Morning	47	34.56
Afternoon	45	33.09
Evening	44	32.35
Supervision		
Well	64	47.06
Not enough	72	52.94

Research variable	Frequency (n)	Percent (%)
Unsafe Conditions		
Well	66	48.53
Not enough	70	51.47
Work environment		
Well	53	38.97
Not enough	83	61.03
Tools/Materials		
Well	65	47.79
Not enough	71	52.21
Unsafe and Dangerous Environment		
Well	67	49.26
Not enough	69	50.74
Work accident		
Ever	102	75.00
Never	34	25.00
Total	136	100,0

Source: Primary Data, 2022

Referencing the distribution of unsafe behaviour variables among nurses at Dr- Tadjuddin Chalid Hospital, Makassar, in 2022, as demonstrated in Table 2 above, it is evident that concerning unsafe actions, a significant majority of respondents fall into the "less" category, accounting for 76 individuals (55.88%). Upon analyzing the perception indicator, the majority of respondents also belong to the "less" category, encompassing 81 individuals (59.56%). As for the work experience indicator, a considerable number of respondents are situated in the "less" category, with 70 individuals (51.47%). In terms of work-related stress, a substantial proportion of respondents encounter moderate stress, comprising 78 individuals (57.35%). Regarding work shifts, the highest number of respondents are associated with the morning shift, constituting 47 individuals (34.56%). Finally, in terms of the supervision indicator, most respondents are positioned within the "less" category, totalling 72 individuals (52.94%).

Examining the distribution of unsafe condition variables among nurses at Dr- Tadjuddin Chalid Hospital, Makassar, in 2022, as depicted in Table 2 above, it is evident that concerning unsafe conditions, a significant majority of respondents are classified under the "less" category, totalling 70 individuals (51.47%). Delving into the indicators of unsafe conditions, specifically the work environment indicator, the majority of respondents also fall within the "less" category, constituting 83 individuals (61.03%). Regarding the indicators related to tools and materials, a substantial number of respondents are positioned in the "less" category, comprising 71 individuals (52.21%). For the environmental indicators encompassing unsafety and hazards, most respondents are also situated in the "less" category, totalling 69 individuals (50.74%). The meaning of the good or bad category here is for the good category, meaning that the work environment or work tools are in the good or safe category to use, while the meaning of the poor category here means that the work environment or work tools still have risks or are not safe.

To assess the distribution of work accident variables among nurses at Dr- Tadjuddin Chalid Hospital, Makassar, in 2022, the data in Table 2 above indicates that, regarding work accident occurrences, a significant majority of respondents, totalling 102 individuals (75%), indicated that they had experienced such incidents. In comparison, a minority of respondents, amounting to 34 individuals (25%), stated that they had never encountered work accidents.

Bivariate Analysis

Subsequently, the outcomes of cross-tabulation between the examined variables are presented, followed by an analysis conducted to establish connections between the independent variables and the dependent variable. In the behaviour of unsafe actions, there are several indicators, namely in terms of perception, work experience, work stress, work shifts, and supervision. Whereas in unsafe conditions there are several indicators, namely in terms of the work environment, tools/materials and the environment are not safe and dangerous. Each of these variables possesses distinct objective criteria and corresponding p-values, which are accessible in Table 3. The subsequent information elucidates the correlation between unsafe behavioural actions and hazardous conditions, alongside the indicators encompassed within the unsafe action behaviour variable, concerning their impact on work accidents among nurses at Dr. Tadjuddin Chalid Hospital, Makassar, in 2022. This information is available in the subsequent table:

Table 3 Presents the Correlation between Unsafe Behavioral Actions and Hazardous Conditions in the Incidence of Work Accidents among Nurses at Dr. Tadjuddin Chalid Hospital, Makassar, in the year 2022.

Research variable	Work accident				Total		P-Value
	Ever		Never		n	%	
	n	%	n	%			
Unsafe Behavior (Unsafe Action)							
Well	40	66.67	20	33.33	60	100.00	0,001
Not enough	56	73.68	20	26.32	76	100.00	
Perception							
Well	33	60.00	22	40.00	55	100.00	0,003
Not enough	63	77.78	18	22.22	81	100.00	
Work experience							
Well	39	59.09	27	40.91	66	100.00	0,012
Not enough	57	81.43	13	18.57	70	100.00	
Work Stress							
Light	26	44.83	32	55.17	58	100.00	0.017
Currently	70	89.74	8	10.26	78	100.00	
Shift work							
Morning	33	70.21	14	29.79	47	100.00	0.004
Afternoon	33	73.33	12	26.67	45	100.00	
Evening	30	68.18	14	31.82	44	100.00	
Supervision							
Well	37	57.81	27	42.19	64	100.00	0.014
Not enough	59	81.94	13	18.06	72	100.00	
Unsafe Conditions							
Well	43	65.15	23	34.85	66	100.00	0.007
Not enough	53	75.71	17	24.29	70	100.00	
Work environment							
Well	33	62.26	20	37.74	53	100.00	0.001
Not enough	63	75.90	20	24.10	83	100.00	
Tools/Materials							
Well	39	60.00	26	40.00	65	100.00	0.006
Not enough	57	80.28	14	19.72	71	100.00	
Unsafe and Dangerous Environment							
Well	35	52.24	32	47.76	67	100.00	0.001
Not enough	61	88.41	8	11.59	69	100.00	

Unsafe behavioural actions encompass perilous or insecure conduct capable of inducing work-related accidents that lead to injuries, and in extreme cases, even fatalities. An extensive 85% of work accidents arise due to unsafe actions or behaviour. Accidents stemming from unsafe actions are attributed to human behaviour as well as the organization's management practices. In contrast, a work accident pertains to an unintended, uncontrollable, and undesirable incident occurring within the work environment, brought about either directly or indirectly by hazardous behaviour or precarious conditions, often prompting the cessation of work operations.

Analyzing the cross-tabulation findings from Table 3, among the total of 136 respondents, nurses exhibiting unsafe behavioural actions categorized as "more or less" have encountered work accidents, comprising 56 individuals (73.68%). Similarly, nurses categorized with "good" unsafe action behaviour have experienced work accidents, amounting to 40 respondents (66.67%). Moreover, the chi-square test yielded a p-value of 0.001 ($p < 0.05$), leading to the conclusion that a significant association exists between unsafe behavioural actions and the incidence of work accidents among nurses. For the job stress indicator, which is one of the indicators of unsafe action behaviour, most respondents in the moderate stress category had experienced work accidents, namely 70 people (89.74%) with a p-value of 0.017 < 0.05 so the indicator Job stress also has a relationship with the occurrence of work accidents in nurses. A considerable number of nurses at Dr. Tadjuddin Chalid Hospital encounter work accidents predominantly as a result of unsafe behaviour stemming from inadequate caution during tasks and diminished concentration while attending to patients. Moreover, a significant number of nurses experience moderate levels of work-related stress, which also contributes to the occurrence of work accidents among them. The research results of Ulaen H. Bagas et al. (2018), also said that there was no relationship between unsafe act behaviour and work accidents in loading and unloading workers at PT. Pelabuhan Indonesia IV (Persero) Bitung Branch with a p-value of (1,000) with a percentage of 26% unsafe behaviour and 74% safe behaviour (17).

Then, if seen in Table 3 through the indicators of the unsafe action behaviour variable, namely the perception indicator, there are more in the less category who have experienced work accidents as many as 63 people (77.78%) with a p-value of 0.003 < 0.05 so that the indicator Perception also has a relationship with the occurrence of work accidents in nurses. The unsafe action behaviour variable also has an indicator of work experience, where there are more in the category of lack of work experience causing 57 people to have experienced work accidents (81.43%) with a p-value of 0.012 < 0.05 so that Indicators of work experience also have a relationship with the occurrence of work accidents in nurses. The outcomes of this study align with the findings of research conducted by Bima Rizaldy Sumairawan in 2019, indicating a correlation between unsafe action variables and work accidents, supported by a significant p-value of 0.018 (18). Similarly, a study conducted by Ice Irawati in 2018 corroborates these findings, demonstrating a significant correlation between unsafe action variables and work accidents among welding workers, with a p-value of 0.000 (19). However, this contrasts with the findings of Orianly Lombogia et al.'s research in 2019, which indicates that no significant relationship exists between unsafe worker behaviour and work accidents among PTs. Tropica Cocoprime, as indicated by a p-value of 1.000. Occupational accidents are rooted in organizational factors that shape unsafe act behaviour, where organizational factors indirectly cause work accidents by creating work environment factors that trigger workers to carry out unsafe act behaviour (20).

Then, if you look at Table 3 through the indicators of the unsafe action behaviour variable, namely the working shift indicator, there are more work shifts during the day shift who have

experienced work accidents as many as 33 people (73.33%) with a p-value of $0.004 < 0.05$ so that the work shift indicator also has a relationship with the occurrence of work accidents in nurses. The last indicator on the unsafe action variable is the supervision indicator, where more respondents in the less category have experienced work accidents as many as 59 people (81.94%) with a p-value of $0.014 < 0.05$ so the supervision indicator also has a relationship with the occurrence of work accidents in nurses. This resonates with the findings of Ani Anggraini & Putri Handayani's research in 2018, underscoring the existence of a correlation between unsafe behaviour and work accidents, substantiated by a p-value of 0.024. This alignment is attributed to the company's lack of consideration for work schedules, which can impact ongoing tasks, as well as inadequate supervision of workers in the field (21). Nevertheless, these findings diverge from the research conducted by Silvia Maria Purnama Istih et al. in 2017, which similarly concludes that there is no substantial correlation between unsafe actions and work accidents among nurses at Panti Waluya Sawahan Hospital in Malang. This result is affirmed by a p-value of 0.231. The variance in outcomes is attributed to the fact that most nurses primarily encounter musculoskeletal disorders attributable to improper work positions (2).

Unsafe conditions refer to precarious situations that present considerable risk to workers. Within a hospital context, unsafe conditions encompass scenarios such as workplaces failing to meet occupational health and safety criteria, resulting in diminished production and productivity. Additionally, inadequate compliance with predetermined standards for personal protective equipment contributes to these conditions. On the other hand, a work accident denotes an undesirable event that can induce loss, injury, illness, and damage, including fatal outcomes. Common occurrences of accidents at Dr. Tadjuddin Chalid Hospital in Makassar encompass instances where nurses are accidentally pricked by needles, encounter slips or falls due to unfavourable work environments, or encounter inadequate workplace conditions. This unsafe condition can also occur due to the psychological condition of nurses or other health workers who work overtime, where they have to work from night to morning even though there is free time from morning to evening which is not enough considering that most health workers are women who also as a wife and mother to their children who must fulfil these obligations.

In general, the results of interviews with health workers where they have limitations in dealing with their workload because according to them the health of the workforce must be appropriate and by the load and the maximum that can be done by all workers. They always have a lot of work to do, and some even have multiple positions, they are workers who are not only burdened physically, mentally, or socially, work that requires a lot of energy.

Based on the results of cross-tabulation in Table 3, it shows that out of 136 respondents, unsafe conditions in the more or less category had experienced work accidents as many as 53 people (75.71%) compared to unsafe conditions in the good category who had experienced work accidents as many as 43 respondents (65.15%). Moreover, the outcomes of the chi-square test yielded a p-value of 0.007 ($p < 0.05$), leading to the inference that a significant connection exists between unsafe conditions and the prevalence of work accidents among nurses. Furthermore, several nurses employed at Dr. Tadjuddin Chalid Makassar Hospital voiced grievances regarding the occurrence of work accidents. They attributed these accidents to factors related to the unsafe work environment and the inadequacy of proper personal protective equipment, which recurrently led to incidents among the nursing staff.

Table 3 also shows the unsafe condition variable also has tool/material indicators, where there are more in the less category or the tools/materials used are still unsafe, causing 57 people to have experienced work accidents (80.28%) with a p-value of $0.006 < 0.05$ so that the tool/material indicator also has a relationship with the occurrence of work accidents in nurses. Unsafe conditions in the hospital occur because the floor is slippery, especially during heavy rain

or when several places or areas are quite open so that when there is a wind blowing accompanied by rain it will cause a slippery floor. This condition then becomes one of the triggers for the occurrence of work accidents.

The results of this study are in line with research conducted by Felly Aprilia Kairupan et al. (2019), which said that there was a significant relationship between unsafe conditions and the occurrence of work accidents with a p-value (0.022). This is because the company does not provide Personal Protective Equipment (PPE) while working and does not maintain cleanliness in the workplace (22). The results of this study are in line with research conducted by Ice Irawati (2018), who also said that there is a relationship between unsafe condition variables for work accidents (gram in the eye) and welding workers at PT. X Batam City with p-value (0.000) (19). This is also in line with research by Yemima Irawanti et al. (2021), who said that the variables related to work accidents are unsafe conditions with a p-value of (0.035) (23).

As a provider of health services, Tadjuddin Chalid Hospital should pay attention to the conditions of its workers starting from small things, Tadjuddin Chalid Hospital operates 24 hours a day, 1 week 7 days and 1 year 365 days a. Thus the service in the hospital requires a pattern of shift work/night guard duty. Those on duty at night can experience increased fatigue due to changes in body rhythms, where the physiological functions of health workers cannot fully adapt to changing work patterns. Most health workers at the hospital have sleep disturbances to the point where they reduce their sleep duration to 4-6 hours because their sleep duration is relatively shorter than it should be, some of them even experience sleep disturbances and can develop digestive disorders. Some of the respondents' confessions also affected family life, especially for female workers, where they sometimes experienced separation from their husbands due to problems with managing children and parents at home which had an impact on stress on health workers.

Unsafe conditions are also experienced by health workers, including nurses and doctors who are pricked by needles, used needles are still found in ways of storage that are not safe and sometimes human errors occur when storing used syringes and accidentally dropping the needle and hitting the leg or part of the body other than that, besides that there were also incidents where a health worker sliced an ampoule while acting as a patient which caused an injury, and there were also incidents of accidents caused by being squeezed, slipped and fallen.

Then, if you look at Table 3 through the indicators of the unsafe condition variable, namely the working environment indicators, there are more in the less category who have experienced work accidents as many as 63 people (75.90%) with a p-value of 0.001 <0.05 so that environmental indicators work also has a relationship with the occurrence of work accidents in nurses. This research is not in line with research conducted by Bima Rizaldy Sumairawan (2019), who also said that there is no relationship between the unsafe condition variable and the occurrence of work accidents with a p-value (1.000) (18). Likewise, the results of research conducted by Dewi Sofiantika & Rakhmat Susilo (2020), said that unsafe conditions or the work environment had no relationship or influence on the occurrence of work accidents at the Banyumas Regional General Hospital because the majority (60%) of the work environment in Banyumas Regional General Hospital is good (24).

For the indicator of the unsafe and dangerous environment which is one of the indicators of unsafe conditions, most of the respondents are in the category of less meaning here, that is, there is still a lack of a safe and non-hazardous environment, causing nurses to have experienced work accidents, as many as 61 people (88.41%) with a p-value of 0.001 <0.05 so that indicators of an unsafe and dangerous environment also have a relationship with the occurrence of work accidents in nurses (see table 3). This study contrasts with the research carried out by Adhwa Umniyyah Danur Irkas et al. in 2020, which concludes that no noteworthy

correlation exists between unsafe conditions and the incidence of work accidents, substantiated by a p-value of 0.074. This disparity is attributed to the fact that workers, while engaged in their tasks, can adopt self-protective measures aimed at mitigating the likelihood of accidents during their work-related activities (14).

At Dr Tadjuddin Chalid Makassar Hospital, the working environment is not safe, because several rooms have roofs that are already in a fragile condition which can fall at any time and fall on nurses or employees at Dr Tadjuddin Chalid Hospital Makassar. Then the placement of medical devices that have been used are not placed in their proper places, and also the floors in several places at the Dr Tadjuddin Chalid Makassar Hospital are very slippery and stagnant when it rains so it is very risky if passed by patients, patient families, nurses or employees Dr Tadjuddin Chalid Makassar Hospital.

CONCLUSION

Derived from the research outcomes and the analysis of the examined variables concerning the correlation between unsafe actions, unsafe conditions, and the incidence of work accidents among nurses at Dr. Tadjuddin Chalid Hospital, Makassar, the ensuing conclusions can be established: Firstly, a notable connection exists between the manifestation of unsafe actions and the occurrence of work accidents. Secondly, there is also a significant relationship between unsafe conditions and the frequency of work accidents. Based on the conclusions, this study suggests that further researchers be able to examine regulations and supervision in hospitals related to occupational health and safety.

REFERENCES

1. Suhariono. *Pengelolaan Keselamatan dan Kesehatan Kerja (K3) di Rumah Sakit*. Surabaya: Uwais Inspirasi Indonesia; 2019.
2. Istih SMP, Wiyono J, Candrawati E. Hubungan Unsafe Action dengan Kecelakaan Kerja pada Perawat di Rumah Sakit Panti Waluya Malang. *Nurs News J Ilm Keperawatan*. 2017;2(2):337–48.
3. Putra AA, Ni'matu Zuliana ZFR, Widajati N, Tualeka AR. Factors Affecting the Incidences of Needle Stick Injury on the Nurses Emergency Department of Hospital East Java. *Indian J Forensic Med Toxicol*. 2020;14(3):1799–803.
4. Probst TM, Goldenhar LM, Byrd JL, Betit E. The Safety Climate Assessment Tool (S-CAT): A Rubric-Based Approach to Measuring Construction Safety Climate. *J Safety Res*. 2019;69:43–51.
5. Çelikkalp Ü, Dilek F. Factors Affecting the Occupational Accident Rates Among Nurses. *Rev da Esc Enferm da USP*. 2019;53.
6. Mallapiang F, Azriful A, Nildawati N, Septiani H. Studi Pengendalian Kejadian Tertusuk Jarum Suntik Pada Petugas Instalasi Gawat Darurat RS. X Kota Makassar. *Al-Sihah Public Heal Sci J*. 2019;11(2):169–84.
7. Massachusetts Department of Public Health. Data Brief: Sharps Injuries Among Hospital Workers in Massachusetts: Findings from the Massachusetts Sharps Injury Surveillance System, 2019. 2019.
8. BPJS Ketenagakerjaan. *Kliping Berita BPJS Ketenagakerjaan Melalui Media Cetak dan Online*. 2019;
9. Meilawati I, Prapancha Y, Wiyono T. Faktor-Faktor yang Berhubungan dengan Kejadian Luka Tusuk Jarum Suntik pada Perawat di Rumah Sakit Bhayangkara Brimob tahun 2018. *J Bid Ilmu Kesehat*. 2019;9(1):24–36.
10. Khoiriyati A, Sari NK. Bed Side Teaching Sebagai Upaya Menurunkan Cidera JArum

- Suntik dan Benda Tajam Pada Mahasiswa Profesi PSIK FKIK UMY. Universitas Muhammadiyah Yogyakarta; 2016.
11. Mawarni T, Taiyep AA. Insiden Kecelakaan Kerja Pada Petugas Di Rumah Sakit TK. III Dr. R. Soeharsono Banjarmasin. In: Proceeding of Sari Mulia University Nursing National Seminars. 2019. p. 182–94.
 12. Pitoyo J, Hamarno R, Saadah TE. Kepatuhan Perawat Menerapkan Pedoman Keselamatan Kerja dan Kejadian Cedera pada Perawat Instrumen di Instalasi Bedah Sentral. *J Pendidik Kesehat*. 2017;6(2):65–70.
 13. Yuliarti L. Gambaran Iklim Keselamatan Kerja (Safety Climate) Pada Perawat dan Tenaga Penunjang Medis Di RSUD Kota Depok Tahun 2017. UIN Syarif Hidayatullah Jakarta; 2018.
 14. Irkas AUD, Fitri AM, Purbasari AAD, Pristya TYR. Hubungan Unsafe Action dan Unsafe Condition dengan Kecelakaan Kerja pada Pekerja Industri Mebel. *J Kesehat*. 2020;11(3):363–70.
 15. Auzoult L, Nguetsa R. Attitude to Safety Rules and Reflexivity as Determinants of Safety Climate. *J Safety Res*. 2019;71:95–102.
 16. Hernaeny U. Populasi Dan Sampel. In: Haryanti S, editor. Pengantar Statistika. Bandung: CV. Media Sains Indoneisa; 2021. p. 33–50.
 17. Bagas UH, Kawatu PAT, Joseph WBS. Hubungan Antara Tindakan Tidak Aman Dengan Kecelakaan Kerja Pada Tenaga Kerja Bongkar Muat Di Pt Pelabuhan Indonesia IV (Persero) Cabang Bitung. *KESMAS*. 2018;7(4):1–8.
 18. Sumairawan BR. Hubungan Unsafe Act Dan Unsafe Condition Dengan Kecelakaan Kerja Pada Pekerja Di Bagian Produksi CV. Gerimis Garment Jakarta Tahun 2019. Universitas Pembangunan Nasional Veteran Jakarta; 2019.
 19. Irawati I. Hubungan Unsafe Condition dan Unsafe Action dengan Kecelakaan Kerja (Kemasukan Gram Pada Mata) Pekerja Pengelasan. *J Kesehat*. 2018;9(2):89–94.
 20. Lombogia O, Kawatu PAT, Sumampouw OJ. Hubungan Antara Perilaku Pekerja Yang Tidak Aman Dengan Kecelakaan Kerja di Pt. Tropica Cocoprime Desa Lelema Kabupaten Minahasa Selatan. *KESMAS*. 2019;7(5):1–7.
 21. Anggraini A, Handayani P. Hubungan Perilaku Tidak Aman dengan Kejadian Kecelakaan Kerja pada Pekerja Konstruksi PT Multikon Proyek Apartemen Citra Lake Suites Tahun 2018. Universitas Esa Unggul; 2018.
 22. Kairupan FA, Doda DV, Kairupan BHR. Hubungan antara Unsafe Action dan Unsafe Condition dengan Kecelakaan Kerja pada Pengendara Ojek Online dan Ojek Pangkalan di Kota Manado. *Kesmas*. 2019;8(6):89–98.
 23. Irawanti Y, Novianus C, Setyawan A. Faktor-Faktor yang Berhubungan dengan Perilaku Pelaporan Kecelakaan Kerja pada Pekerja Bagian Produksi PT. X Tahun 2020. *J Keselamatan, Kesehat Kerja dan Lingkung*. 2021;2(1):55–63.
 24. Sofiantika D, Susilo R. Hubungan Beban Kerja dan Lingkungan Kerja dengan Kejadian Kecelakaan Kerja pada Perawat Ruang Rawat Inap di RSUD Banyumas. *J Keperawatan Muhammadiyah*. 2020;JKM Edisi(September):249–53.