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Behavior Factors Of Ppe Use (Masks) Against Disorders Of Working Respiratory System Cigarette Factory

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ABSTRACT
Cigarette factory is a work environment that has dust exposure from tobacco processing. Piles of tobacco containing nicotine and tar that have a strong scent also cause a feeling of tightness in the chest. Personal protective equipment (PPE) in the form of a mask plays an important role in protecting the respiratory system from the negative effects caused by cigarette factories where the mask functions to protect the respiratory system from dust, chemical, steam, smoke, gas/fume and mist (aerosol). The method in this research is literature riview and data search based on 3 database that is google scholar, pubmed, research gate. The articles used are national and international articles by using several key words such as respiratory system disorders, cigarette factory workers, wearing PPE mask, cigarette factory worker behavior and the tobacco industry with journal publication in 2015-2020. Based on the results of a riview of seven articles that focus on cigarette factories, there is a conclusion that dust and odor are the main problems complained by cigarette factories workers and respiratory system disorders are a result of workers disobedient in the use of PPE mask caused by workers bad behavior. Workers behavior is influenced by length of work regulations, support of co-workers and support of leaders. It cannot be denied that cigarette factories have a great risk to the health problems of their workers, one if which is a respiratory system disorder caused by workers behavior that is not compliant in using PPE mask at work.

Keywords: Behavioral Cigarette Factory PPE Mask Respiratory system disorders.

INTRODUCTION
The industrial sector contributes greatly to the economic development of a country. One of the processing industries that is the driving force or leading sector of the economy is the Tobacco Products Industry (IHT), Gustyanita, 2013. Indonesia is ranked among the top 10 countries as the main tobacco producer in the world (Tobaco Control Support Center, 2012). Industry sectors such as cigarette factories can have various positive and negative impacts. Positive impacts such as the availability of employment and community income also increase but the negative impact caused is that workers in the industrial sector will experience a variety of possible risks such as workplace accidents and occupational diseases.

The International Labor Organization (ILO) in 2013 estimated that the majority of workers died from work-related diseases caused by exposure to gas, steam and dust. Respiratory tract diseases caused by the presence of particles (dust) that enter or settle in the lungs are the occupational diseases that suffer most by workers. The ILO also mentioned mention, about 30% to 50% of workers in developing countries suffer from the disease including Indonesia.

The cigarette factory industry absorbs a lot of labor, especially labor with low levels of expertise and formal education. In Indonesia cigarette factory workers are dominated by female

workers where women are classified as a group prone to lung function disorders due to exposure to tobacco dust, because lung volume and capacity in women is 25% smaller than men. Therefore, it is not uncommon for the tobacco industry to risk creating negative impacts on the health of workers, especially women (diyah, 2017).

Risk factors for respiratory system disorders are age, sex, smoking, respiratory tract hyperresponsiveness, occupational exposure, air pollution, and genetic factors. Other extrinsic factors are the duration of exposure, worker behavior, the use of personal protective equipment (PPE), especially those that can protect the respiratory system, and exercise habits (Nindya, 2017). Personal protective equipment which is an important tool in the workplace is often ignored by workers or employees, even by workplace management (icha, 2019). One of the safe behaviors in the workplace is using personal protective equipment (PPE) according to the type of work to prevent work accidents or occupational diseases. Heri, 2014). The use of PPE must meet the requirements such as comfortable (comfortable) to wear, does not interfere with the implementation of work and provide effective protection against the kinds of hazards faced (Abdul, 2018).

The purpose of this study was to determine the factors of the behavior of the use of PPE masks that cause respiratory system disorders in cigarette factory workers, based on scientific reference sources in previous studies.

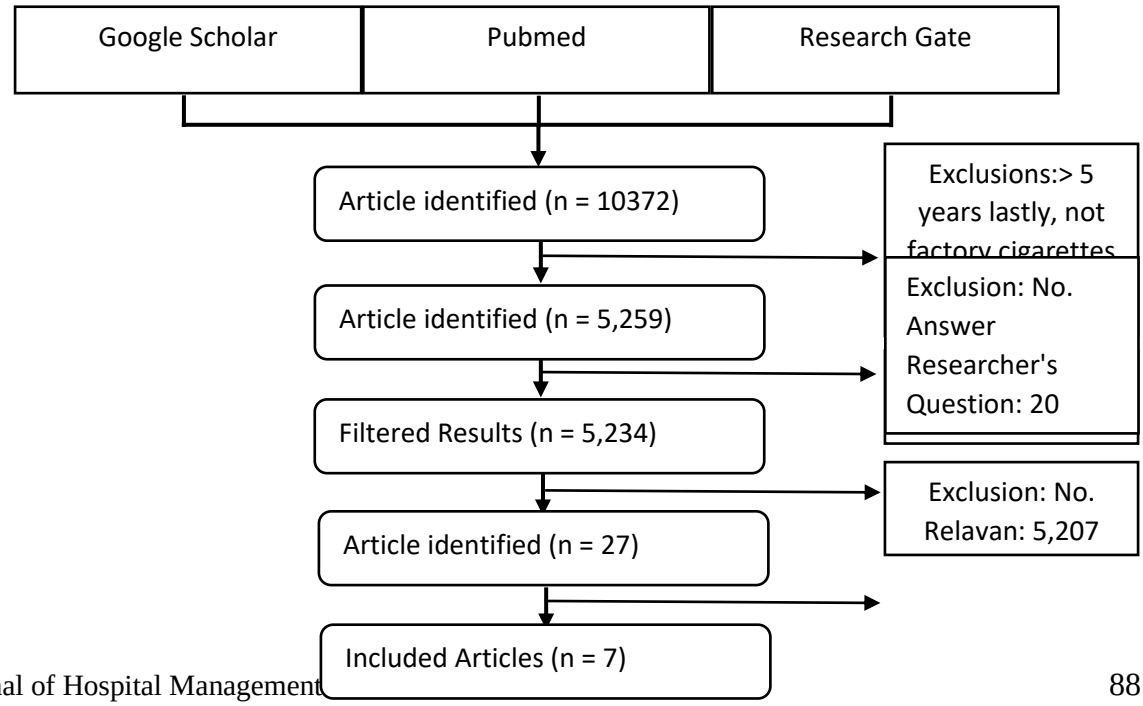
METHODS

Author's question: What are the factors of the behavior of the use of PPE masks that affect the respiratory system disorders of cigarette factory workers?

Key words in English and Indonesian: impaired respiratory function of cigarette factory workers, wearing PPE mask, behavior of cigarette factory workers and the tobacco industry. Inclusion criteria: articles that have titles and themes that are relevant to the objectives, relevant research variables and required research data, research articles published in the 2015-2020 period. Exclusion criteria: articles that do not have complete structure / data that are not needed, article reviews.

Data obtained from google scholar database, pubmed, research gate between 2015-2020. Of the 3 databases selected the most relevant to the theme of this study and obtained 7 articles, after reading carefully starting from the abstract, variable researched and analyzed from the researchers' initial questions, to gather information about respiratory disorders of cigarette factory workers, wearing PPE masks and worker behavior.

Research Algorithm :



RESEARCH & RESULT

No	Author	Journal Name Vol, No, Year	Title	Methods (Design sample, Variable, Instrument , Analysis)	Research result	Conclusion	Data Base
1	Abdul Muhith, Mujib Hannan, Nurul Mawaddah , Citra Astri Aqnata	Journal of Health Sciences Vol.3 No.1 May 2018	Use of personal protective equipment (APD) masks with disruption of prognosis in workers at Pt Bokormas Kota MOJOKERTO	Analytical studies of correlation with the cross sectional approach of a sample of 47 cigarette factory workers. Instrument of approach, interview and observation .	Workers do not use PPE masks when working 19 respondents (40.4%), who use masks while working 28 respondents (59.6%), the type of masks worn by the hood cloth is brought from home while the masks provided by the company are only 2 respondents who wear them. workers who experienced complaints of respiratory disorders by (68.1%) as many as 32 respondents workers did not experience complaints of respiratory disorders altogether (31.9%) as many as 15 respondents. Spearman Rank Correlation Test between the two variables p-value = 0.013 <0.05 which means that H0 is	It can be said that the behavior of workers in wearing PPE masks is classified as negative and there is a Significant Relationship between the use of Personal Protective masks and Channel Interference	Google Scholar

					rejected.		
					,		
2	Nindya Kurnia Aprinita , Kusyog o Cahyo, Ratih Indrasw ari	Journal of Public Health at (eJourna l)Volum e 5,Numb er 5, October 2017 (ISSN: 2356 3346)	Factors Related to User Behavior and Personal Protective Equipmen t (APD) in Employee s of Praoe Lajar Factory in Semarang	descriptive analytic quantitative approach . Sample of 46 cigarette factory employees. Instrument of the interview using a questionnai re and a means of checking lung function (spirometry)	Variables Associated with Behavior in the use of PPE on cigarette factory employees: Length of Work pvalue 0,0001 < 0.05, availability of work regulations p-value 0.001 <0.05, support of coworkers p-value 0.001 < 0.05, pvalue0,001 leadership support < 0.05	Behavior of workers in the use of PPE can be Categorized good and not good can be influenced by the length of work, Coworkers and support from the Company itself. Respondent behavior has good PPE Usage behavior by 65.2%. the use of Protective Headwear (haircap) 100% because it is required from the company but there are still many who do not using PPE Nose Protectors (masks) (45.7%)	Google Scholar

3	Diyah Putri Permata Sari, Budiono, Nikie Astorina Yunita D.	Factors Related to Lung Function Disorders In Women Workers in Semarang Praoe Lajar Cigarette Factory , Central Java	analytical observation , with cross sectional study design. Sample 36 female workers. Instrument Questionnaire and measurement Dust exposure levels use Personal Dust Sampler (PDS).	Workers do not use PPE masks 36 respondents (100%). Workers are exposed to Dust 20 respondents, 12 of which are exposed to dust (100%)> NAV 10 mg / m3 (p value of 0.024 (p <0.05). Age of Respondents who experience respiratory distress as many as 20 respondents, 15 of them (65, 2%) aged> 30 years and aged ≤ 30 were 5 respondents (38.5%) (p value of 0,229 (p >0.05). Normal Nutritional Status of 8 respondents, not normal 12 respondents (p value of 0.793 (p >0.05). Working Period, 17 respondents (70.8%) work period ≥ 10 years, 3 respondents (25%) <10 years, (p value of 0.024 (p <0.05).	Pulmonary Function measurements of 36 workers obtained the results of 20 (55.5%) Workers experiencing Pulmonary Function disorders with the category of restrictions, Obstruction and a mixture of restrictions, obstruction. Where dust exposure and work period have a Relationship between the occurrence of Pulmonary Function impairment of workers in the Cigarette Factory	Google Scholar

4	Ayu Munawa, Aziz, Ida Srisurani WA, Madha Qoyyulle dy Tursina	Journal of Health Vol. 8 No. 1 April 2020 Pg 63 -70. 2019	Differenc e in Forced Vital Capacity (FVC) in Menopaus al Women and Fertile Age Women of Tobacco Factory Workers	analytic onal observation with cross sectional study design. Sample 30 Menopausa Women and Fertile Women. analysis of this data data and bivariate analysis	15 menopausal women and 15 women of childbearing age. Menopausal women value of% pred FVC has decreasedie 66.53%. Women of childbearing age predictive value of FVC are 83.87%. Normally the value of% FVC pred is a minimum of 80%	The results show that there is a Significant difference in the value of Forced Vital Capacity (FVC) Between Menopausal women and women of Childbearing age of Tobacco Factory workers. From all respondents, it can be seen that there is a decrease in the value of FVC in the form of Impaired Pulmonary retention and the odds ratio test shows that the Menopause group is 8 times more at risk of experiencing lung retection Disorders	Google Scholar

5	Indartic Mamnu'ah, Sri Winarni, Dharminto, FaridAgushyibana	Journal of Health Public (e-Journal) Volume 6, Number 1, January 2018 (ISSN: 2356-3346	Employee Relationship anxiety level, Use of Masks and Exposure to Cigarette Materials Against Menstrual Cycle Disorders i Cigarette Factory Employees in Lamong	Quantitative research with cross sectional study design. A sample of 84 female workers. Data analysis uses univariate analysis, and bivariate analysis (Chi Square Continuation and Correctional Point and Point).	Out of 84 respondents 73 (86.9%) having menstrual disorders. Relationship of Work Period with Menstrual Cycle Disorders p value = 0.334 (> 0.05). The Relationship between Anxiety Level and Menstrual Cycle Disorders p value = 0.469 (> 0.05). The Relationship between Mask Use and Menstrual Cycle Disorders p value = 0.567 (> 0.05), and the majority of respondents were not compliant to use masks as many as 56 (66.7%). Relationship between cigarette exposure and menstrual cycle disorders p value = 0.280 (> 0.05) 1. Problem experienced in the Workplace by smelly factory workers 28 (56%), dust 32 (64%). Dust	Disorders of the menstrual Cycle Experienced by female Cigarette Factory workers do not have a Significant Relationship related to years of service, Anxiety Level, Use of Masks, Exposure to Cigarette Materials. It Was Concluded that the majority of zarda factory Workers complained of Respiratory symptoms, Especially Tobacco Factory workers and complaints of other health problems such as headaches and vomiting tendencies. 35% of women and 27% of men complain of nausea and vomiting that seems related to the specific aroma of tobacco. As a	Google Scholar

					office workers 4 (20%), odor 1 (15%) 2. Function Lung of respondents By measuring PEFR it was found that manufacturing workers , at 418 L / min (SD 83.98), had a significantly lower PEFR than office workers, 447 L / min (SD 89.86); t = 11,843, p =. 05.	result, continuous exposure to the tobacco processing environment affects the volume of lung workers, which can cause lung abnormalities.	
6	Tirthankar Ghosh, Sangita Barmn	International Journal Safety and Ergonomics (JOSE), Vol. 13. N0. 1, 91-96. Published 2015	problems of Workers in the Zarda Industry in Kolkata, India	quantitative Sample 70. 50 processing workers n, 20 office employees. PFT measurements were performed with SpirovitSp-10, PEFR measurements were performed with a mini Wright peak flow meter. Instrument questionnaire. For statistical analysis Student Test	Problems experienced in the Workplace by smelly factory workers 28 (56%), dust 32 (64%). Dust office workers 4 (20%), odor 1 (15%) Function Lung of respondents By measuring PEFR it was found that manufacturing workers , at 418 L / min (SD 83.98), had a significantly lower PEFR than office workers, 447 L / min (SD 89.86); t = 11,843, p =. 05.	It was concluded that the majority of zarda factory workers complained of respiratory symptoms, especially tobacco factory workers and complaints of other health problems such as headaches and vomiting tendencies. 35% of women and 27% of men complain of nausea and vomiting that seems related to the specific aroma of tobacco. As a result, continuous exposure to the tobacco processing environment affects the volume of lung workers,	Pubmed

						which can cause lung abnormalities.	
7	Nagesh Anand Bhalshankar	International journal of advance research ,ideas and innovations in technology. Volume 6,Issue 3. 2020. ISSN: 2454-132X	Effects of tobacco dust on bidi rollers	The study was a Control Group: Healthy Control100 respondents of normal healthy age. interview instruments and questionnaires	issues reported by bidi rollers / tobacco factory workers is : Pain body effect continuous work in a static position, Cough, which may be related to exposure to tobacco dust, Pain associated with stomach such as cramps, gas, and seizures that cause diarrhea, morning cough day, Cough all day long, tightness of chest.	This research shows that bidi brawler woman face many health problems due to inhaling tobacco dust directly such as asthma, conjunctivitis burning eyes, chronic obstructive bronchitis and respiratory or nasal respiratory disease. There is a need to provide education to bidis women rollers about the health hazards caused by tobacco & their impact and the need to use them protective clothing such as gloves, masks.	Research Gate

The process of searching for articles that are reviewed based on 3 databases that are believed to be worthy of publication is Google Scholar finding 5,940 articles, pubmed finding 3,432 articles and Research Gate found 1,000 articles. The filtered selection results found 7 relevant articles on the theme of this study and the year of publication from 2015 to 2020.
In the study of Tirthankar et al in 2015 and Nagesh in 2020 cigarette factory workers complained of odor, dust, cough that might be related to tobacco dust exposure and chest tightness, in line with research conducted by ayu et al in 2019 where the sample in the study was female cigarette factory workers which is further categorized into 2 groups, namely the group of menopausal women and women of childbearing age who have measured Forced Vital Capacity (FVC) with the results of menopausal women the value of% pred FVC has decreased by 66.53%. Women of childbearing age predictive value of FVC are 83.87%. Normally the value of% FVC pred is at least 80%.

The possibility of female workers in cigarette factories experiencing respiratory system disorders is due to not behaving properly such as not using PPE masks at work and added to the length of service. It is justified in the research of Diyah et al in 2017 with the results of work period having a significant relationship to the occurrence of lung function disorders of cigarette factory workers, and can be exacerbated by the behavior of workers who do not use PPE in the form of masks at work.

Some of the studies above found that workers had negative behaviors towards wearing PPE masks. One of the indartic research conducted in 2018 with the results there was no relationship between the use of masks with menstrual cycle disorders in women workers in cigarette factories but there are data that appear in the study that the majority of respondents were not compliant to use as many as 56 masks (66.7%) or in the research of Abdul et al in 2018 where workers who used masks while working were fairly good at 59.6% but the type of masks worn by the hood was brought from home while the masks provided by the company were only 2 people who used them.

DISCUSSION

Of all the relevant article searches on the title / theme of this study, 7 of them are the most appropriate and published from the range of 2015 to 2020. Where articles that have been selected have been read carefully from the abstract, the variables studied, methods, results of the corresponding research with researchers' questions related to the breathing problems of cigarette factory workers, wearing PPE masks and worker behavior. The place of research for all articles that have been selected is carried out in national / international cigarette industries / factories.

Based on the seven research articles, it can be concluded that there are still problems in the cigarette industry / factory related to respiratory system disorders that are complained of by workers and negative behavior of workers related to wearing PPE masks. Can be seen in the FVC measurement of women cigarette factory workers there is a decrease from the normal FVC. Forced Vital Capacity (FVC) is the volume of gas that can be released as loud as possible and as quickly as possible after a maximum inspiration. FVC measurements are carried out to measure the vital lung capacity due to exposure to inhaled dust (Arief, 2017).

According to Ramazzini (Italian doctor, scientist and academic) in the 2018 international journal also highlighted that fine dust that spreads in the air during tobacco processing responsible for lung and trachea injuries. That is why workers are asked to cover their mouths and noses for the purpose of preventing dust from entering the lungs and being able to breathe clear air and often wash their faces with cold water.

Safe and unsafe behavior in the workplace depends on each individual. There are four effective factors to improve safety behavior, namely: safety attitudes, employee's involvement, safety management systems and procedures, and safety knowledge. A combined strategy of safety climate and work experience is needed to optimally improve safety behavior in order to achieve total safety culture (Ismail, 2011). It is clearly stated in the Law of the Minister of Manpower and Transmigration about the personal protective equipment of workers / laborers and others who enter the workplace must wear or use PPE in the workplace in accordance with the potential hazards and risks (Permenkes, 2010).

Personal protective equipment (PPE) should be provided by employers for workers and provided free of charge in accordance with applicable Indonesian national standards (SNI). Employers or administrators are required to announce in writing and install signs regarding the obligation to use PPE in the workplace (Permenkes, 2010).

CONCLUSION

Based on the analysis of the authors of the journals / articles reviewed where the research focus is on cigarette factories. It was concluded that there are still problems that occur in the cigarette industry / factory related to complaints of respiratory system disorders and worker behavior can still be said to be negative / unfavorable to wearing PPE masks.
Cigarette industries / factories are expected to pay more attention to the regulations on the use of PPE, especially masks, because with the written regulation it is likely that workers' behavior will improve.

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