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## FACTORS RELATED TO WORK FATIGUE ON TRUCK DRIVERS AT PT KORDON PUTRA IN SUMEDANG REGENCY IN 2022

Dadang Sulaeman<sup>1</sup>, Rizki Fauzi<sup>2</sup>  
Public Health Science Study Program  
Faculty of Health Science, Sebelas April University  
Email: rf240299@gmail.com

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### ABSTRACT

*Fatigue is caused by several factors, namely workload, work capacity, and additional burden due to the work environment. Individual factors on fatigue such as age, workload, and nutritional status have a strong influence on causing fatigue. The purpose of this study was to determine the relationship between age, workload, nutritional status with work fatigue on truck drivers at PT Kordon Putra, Sumedang Regency. This research method used quantitative research with a cross sectional approach. The population in this study were 140 truck driver employees and the research sample was 58 truck driver. The instrument used was distributing questionnaires to respondents. Data were analyzed using chi square. The results of this study found that there was a relationship between age ( $p = 0.000$ ) with work fatigue, workload ( $p = 0.000$ ) with work fatigue, nutritional status ( $p = 0.000$ ) with work fatigue. It is hoped that PT Kordon Putra will provide more education to truck driver employees and to minimize the safety of truck driver employees when driving trucks.*



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### Corresponding Author:

Rizki Fauzi,  
Public Health Science Study Program,  
Faculty of Health Science, Sebelas April University,  
Jl. Cipadung No.54, Kotakaler, Sumedang Utara, Sumedang, Jawa Barat 45621, Indonesia.  
Email: rf240299@gmail.com.

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## 1. INTRODUCTION

Land transportation is one of the main infrastructures for the economy in Indonesia (Daulay, 2018; in Raihanil 2020). Many people in Indonesia or in the world who use machine transportation to carry out their daily activities. The means of transportation such as two wheels or four wheels. Likewise with the delivery of goods between islands and between provinces. Many individuals or goods companies who want to deliver their manufactured goods to their destination use the services of a delivery company or individual services such as using a truck which of course uses a driver (Depari, 2016, in Raihanil 2020).

Truck drivers as drivers according to the Law of the Republic of Indonesia Number 22 of 2009 concerning road transport traffic are people who drive motorized vehicles on the road who already have a driving license (SIM). The driver's license must match the type of motorized vehicle being driven. And based on the Law of the Republic of Indonesia Number 22 of 2009 letter c market 80 concerning road traffic and public transportation, SIM B II is valid for drivers of heavy equipment vehicles, towing vehicles, or motorized vehicles by pulling a patch carriage or individual trailer with a weight that is allowed for patch carriage or trailer of more than 1,000 kilograms. As a professional driver, you must have the following characteristics: have knowledge of the correct or proper driving methods and techniques, have high alertness when driving, have vision and vision in all directions and far ahead, have the ability to make quick and

accurate decisions, have expertise and skills as a learning process and driving experience. In working truck drivers as ordinary people feel tired (Handayani, 2017 in Raihanil 2020).

Every company that uses the services of a driver must be able to provide an understanding of driving in order to reduce the high number of traffic accidents that can cause death. Traffic accidents are one of the leading causes of death in the world. In 2010, injuries due to traffic accidents killed at least 1.24 million annually in the world, meaning that there are about 3,397 people die every day worldwide due to traffic accidents (WHO, 2017).

Fatigue is also one of the causes of Work Accidents in the Transportation Sector, as can be seen in the results of a study conducted in Peru by Castrodan Loureiro in 2004 which said that drivers who lack sleep time will feel tired and very sleepy (eyes fallen shut) while driving. Based on statistical data from the National Highway Traffic Safety Administration, 20% of all traffic accidents are caused by driver fatigue. Drowsiness while driving causes at least 100,000 accidents per year in the United States resulting in 40,000 minor accidents and 1550 serious accidents (in Raihanil 2020).

According to Law no. 22 of 2009 concerning Road Traffic and Transportation states that drivers are required to drive their vehicles fairly and with high concentration because they have fast and precise coordination between the eyes, hands, feet, and brain that stay focused for hours so that driving is a very difficult job. risk of experiencing fatigue and various other disorders.

PT. KDP Kordon Putra is located at Cibereum Kulon, Cimalaka District, Sumedang Regency as a business entity engaged in the supply and distribution of building materials of the type of milled sand or stone ash, always using trucks for its marketing operations. In meeting the needs of its consumers PT KDP has sufficient land for industrial raw materials consisting of stone and andesite sand, for marketing PT KDP does marketing outside Sumedang including: Majalengka, Bandung, Indramayu, Subang, and outside West Java with a fleet of dump trucks which are in PT KDP are 101 units and 140 truck drivers. Why are there more drivers, because the operating hours alternate with more drivers.

Based on a preliminary study in May 2022 by researchers at a sand mining company in Sumedang Regency on 5 PT KDP employees who work as truck drivers, it can be concluded that on average they experience fatigue when driving badly. This fatigue is caused by cross-city driving which takes a very long time and the intensity of the work time is relatively long. So when in the field a lot of complaints from the drivers. Because the working time is up to 5 hours more so it is relatively long, there are often cases of accidents involving truck drivers at PT KDP Kordon Putra. The age variable is that workers aged from 20-50 years are not at risk and from 55 years and above are at risk, so it can be said that the highest fatigue occurs at the age of 55 years and over. Various physical/biological and social problems will appear at risky age as an aging process or degenerative disease that appears along with a person's aging. Aging is a natural process that will be experienced by every individual. The workload variable is a difference between the capacity or ability of workers and the demands of the work that will experience fatigue due to the workload because in working using physical, each has a different level of loading. The nutritional status variable is an individual description as a result of daily nutritional intake. . Nutritional status can be known through the measurement of several parameters, then the results of these measurements are compared with standards or references. There are often cases of accidents involving truck drivers at PT Kordon Putra. Accident cases that have occurred at PT Kordon Putra Kab. This Sumedang numbered more than 10 cases which were dominated by truck drivers.

## **2. METHOD**

This research uses quantitative research methods. By using this research design using cross sectional. The independent variables in this study are factors related to work fatigue. The dependent variable in this study was work fatigue on PT Kordon Putra truck drivers in Sumedang Regency. The population in this study were all 140 PT Kordon Putra truck drivers in Sumedang Regency. In this study, sampling using the formula according to Slovin. Taking into account the time and effort that tends to be in terms of an error tolerance level of 10%, then the number of samples obtained from the total population are 58 truck drivers. The sampling technique used in this study is a random sampling technique, and Accidental Sampling.

The questionnaires used consist of questionnaires that have been used by other researchers and have been declared valid and standard questionnaires. The questionnaire consists of 4 variables that will be examined: work fatigue with tired and not tired, light and heavy workload, nutritional status using the measurement of BMI (Body Mass Index) TB/BB, while age .20-50 years is not at risk 55 over the year at risk.

Because the researcher used a standardized questionnaire, namely the results of Alfiatin Eka Andriani's research at STIKES Bhakti Husada Mulia Madiun 2021, the validity and reliability tests were not carried out anymore, because this questionnaire was considered valid and understandable and could be used and in accordance with what you wanted to ask. to the respondent.

### 3. RESULTS AND DISCUSSION

#### 3.1. Results

##### 3.1.1 Univariate Analysis

Table 3.1 Frequency Distribution of Respondents on Age at PT Kordon Putra in 2022

Age	Frequency	Percent%
No Risk	52	89,7
Risk	6	10,3
Total	58	100%

Based on table 3.1 it can be concluded that the highest frequency based on age is in the non-risk group with a total of 52 people (89.7%)

Table 3.2 Frequency Distribution of Respondents on Workload at PT Kordon Putra in 2022

Workload	Frequency	Percent%
Light	14	24,1
Heavy	44	75,9
Total	58	100%

Based on table 3.2 it can be concluded that the highest frequency based on workload is in the heavy group with a total of 44 people (75.9%)

Table 3.3 Frequency Distribution of Respondents on Nutritional Status at PT Kordon Putra in 2022

Nutritional status	Frequency	Percent%
Normal	20	34,5
Fat	8	13,8
Very Fat	30	51,7
Total	58	100%

Based on table 3.3 it can be concluded that the highest frequency based on nutritional status is in the very obese group with a total of 30 people (51.7%)

Table 3.4 Frequency Distribution of Respondents on Work Fatigue at PT Kordon Putra in 2022

Work Fatigue	Frequency	Percent(%)
Tired	44	75,9
No Tired	14	24,1
Total	58	100%

Based on table 3.4 it can be concluded that the highest frequency based on work fatigue is in the tired group with a total of 44 people (75.9%).

##### 3.1.2 Bivariate Analysis

Table 3.1.1 Relationship between Age and Work Fatigue on Truck Drivers at PT Kordon Putra, Sumedang Regency in 2022

Age	Work Fatigue				Total		P Value*
	Tired		No Tired		F	%	
	F	%	F	%			
No	44	39,4%	8	12,6%	52	89,7%	0,000
Risak							
Risk	0	0%	6	1,4%	6	10,3%	
Total	44	75,9%	14	24,1%	58	100%	

Based on table 3.1.1 regarding the relationship between age and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency. It was found that respondents with age at risk, there were 6 respondents (1.4%) in the category of work fatigue not tired. From the group of respondents with age not at risk, there are 44 respondents (39.4%) in the category of experiencing fatigue and 8 respondents (12.6%) in the category of

not experiencing fatigue. The results of the Chi-Square test ( $p = 0.000$ ) stated that there was a relationship between age and work fatigue for truck drivers at PT Kordon Putra, Sumedang Regency.

Table 3.1.2 Table 3.2.2 Relationship between Workload and Work Fatigue for Truck Drivers at PT Kordon Putra, Sumedang Regency in 2022

Workload	Work Fatigue				Total		P Value*
	Lelah		Tidak Lelah		F	%	
	F	%	F	%			
Light	0	0%	14	3,4%	14	89,7%	0,000
Heavy	44	33,4%	0	0%	44	10,3%	
Total	44	75,9%	14	24,1%	58	100%	

Based on table 3.2.2 regarding the relationship between workload and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency. It was found that the respondents in the light workload category, there were 14 respondents (3.4%) in the work fatigue category who did not feel tired. From the group of respondents in the heavy workload category, there were 44 respondents (33.4%) in the work fatigue category who experienced fatigue. The results of the Chi-Square test ( $p = 0.000$ ) stated that there was a relationship between workload and work fatigue for truck drivers at PT Kordon Putra, Sumedang Regency.

Table 3.1.3 Relationship between Nutritional Status and Work Fatigue for Truck Drivers at PT Kordon Putra, Sumedang Regency in 2022

Nutritional status	Work Fatigue				Total		P Value*
	Tired		No Tired		F	%	
	F	%	F	%			
Normal	20	15,2%	0	0%	20	34,5%	0.000
Fat	8	6,1%	0	0%	8	13,8%	
Very Fat	16	22,8%	14	7,2%	30	51,7%	
Total	44	75,9%	14	24,1%	58	100%	

Based on table 3.1.3 regarding the relationship between nutritional status and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency. It was found that the respondents in the normal category, there were 20 respondents (15.2%) in the work fatigue category who experienced fatigue. From the group of respondents with the category of obese nutritional status, there were 8 respondents (6.1%) in the work fatigue category who experienced fatigue. From the group of respondents with very fat nutritional status category, there were 16 respondents (22.8%) in the work fatigue category who experienced fatigue and 14 respondents (7.2%) in the work fatigue category did not experience fatigue. The results of the Chi-Square test ( $p = 0.000$ ) stated that there was a relationship between nutritional status and work fatigue for truck drivers at PT Kordon Putra, Sumedang Regency.

## 3.2. Discussion

### 3.2.1 . The Relationship between Age and Work Fatigue

Based on the results of statistical tests obtained p value of 0.000 and it can be concluded that there is a significant relationship between age and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency.

According to the theory of Suma'mur (1994) increasing age will be followed by a process of organ degeneration, so that in this case the organ's ability will decrease.

Age Relating to performance because increasing age will be followed by a process of degeneration of the organ so that in this case the ability of the organ will decrease. With a decrease in the ability of organs, this will cause the workforce to experience fatigue more easily. The condition, ability and capacity of the human body will decrease. The older you get, the more prone you are to fatigue. Aging will result in gradual damage to the physiological, chyrcardian, and sleep systems. A person at the age of 40-49 years, the condition of decline begins to be seen from the discovery of a diagnosis of disease and at the age of 50-55 years a person's work capacity will decrease. Fatigue will be felt more prominent with age. This is due to a decrease and muscle endurance, so fatigue will increase. (Budiman, A, et al, 2016)

From age it can be seen that there are several physical capacities such as vision, hearing and decreased reaction speed. Most physical performance peaks in their mid-20s and then declines with age. WHO states the age limit for the elderly is 60 years and over. While in Indonesia 55 years is considered the limit for old age.

### 3.2.2 The Relationship between Workload and Work Fatigue

Based on the results of statistical tests obtained p value of 0.000 and it can be concluded that there is a significant relationship between workload and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency.

According to Setyawati's theory (2010) that the workload given to workers needs to be adjusted to the psychological and physical abilities of the workers concerned, travel conditions, travel time from place to work which is as minimal as possible and as safe as possible affects occupational health conditions in general and fatigue. special work.

Excessive physical activity as well as tasks and workloads that pile up are also a problem in work for humans. Physical activity and tasks and workloads that accumulate which are followed by human inability to adjust can result in psychological problems for the workforce. The psychological problem is stress, due to workers who are not able to adjust to the tasks and workload in their work. Heavy workload conditions such as pushing or pulling, as well as lifting wood or other objects over long distances can affect work fatigue as many as (53%) and as many as (90%) workers who every day carry out excessive pulling and pushing activities. Then the pulse will immediately change in rhythm with changes in loading, whether originating from mechanical, physical, or chemical loading, causing changes in heart rhythm.

### 3.2.3 Relationship between Nutritional Status and Work Fatigue

Based on the results of statistical tests obtained p value of 0.000 and it can be concluded that there is a significant relationship between nutritional status and work fatigue on truck drivers at PT Kordon Putra in Sumedang Regency.

According to the theory of Budiono, et al (2003) nutritional status is one of the causes of fatigue. A worker with good nutritional status will have better body resistance and work capacity, while a worker with poor nutritional status will have poor body resistance and work capacity as well.

The problem of malnutrition or excess nutrition in adults (aged 18 years and over) is an important problem, because apart from having the risk of certain diseases, it can also affect work productivity. Due to lack of nutrients, the stored nutrients in the body will be used to meet needs. If this continues for a long time, then nutrient stores will be depleted and tissue deterioration occurs, by increasing nutrient deficiency, biochemical and nutrient changes in the blood appear low, in the form of low Hb levels, serum vitamin A and carotene. There is an increase in several metabolic products such as lactic and pyruvic acid in thiamine deficiency. If this situation lasts a long time, it will result in changes in body functions that are marked, namely weakness, dizziness, fatigue, shortness of breath and others. (Supariasa, et al., 2002).

A truck driver with good nutrition will have a better working capacity and endurance, and vice versa. In a state of poor nutrition with a heavy workload, it will interfere with work and reduce efficiency and body resistance so that it is easy to contract diseases and accelerate the onset of fatigue.

## 4. CONCLUSION

From the results of the study "Factors Associated with Work Fatigue on PT Kordon Putra Truck Drivers in Sumedang Regency in 2022" it can be concluded as follows:

1. From the factors of work fatigue in the age group of 58 respondents with the highest frequency in the no-risk group as many as 52 respondents (89.7%), in the workload group of 58 respondents with the highest frequency in the heavy group as many as 44 respondents (75, 9%), in the nutritional status group of 58 respondents with the highest frequency in the very obese group as many as 30 respondents (51.7%), in the work fatigue group from 58 respondents with the highest frequency in the tired group as many as 44 respondents (75.9%).
2. There is a relationship between age and work fatigue for truck drivers at PT Kordon Putra, Sumedang Regency.
3. There is a relationship between workload and work fatigue for truck drivers at PT Kordon Putra, Sumedang Regency.
4. There is a relationship between nutritional status and work fatigue on truck drivers at PT Kordon Putra, Sumedang Regency.

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