

## **Special Nutrition For Workers In Extreme Work Environments: Literature Review**

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### **Abstract**

Work productivity is influenced by various factors, one of which is work nutrition. Work nutrition is a nutrient found in food and is needed by workers to meet energy needs according to workload and work environment conditions. Extreme work environments, both hot and cold, can increase workers' energy needs to maintain body balance. This article aims to examine the relationship between nutritional status, workload, and work environment conditions on work fatigue. The method used is a literature review by selecting 20 relevant articles in the last 10 years through Google Scholar. The results of the study showed that inadequate nutritional status, low calorie intake, and extreme work environments, such as high or low temperatures, contribute to work fatigue. In addition, unbalanced nutritional intake, such as excess sodium or lack of fiber, also negatively affects worker health and productivity. Increasing nutritional intake according to individual needs, including adjusting diet patterns, is important to support endurance and reduce the risk of fatigue in extreme work environments. This article recommends managing diet patterns and monitoring workers' nutritional status to improve worker productivity and well-being.

**Keywords:** Extreme Work Environment; Nutritional Status; Occupational Fatigue; Occupational Nutrition

### **Introduction**

Productivity is a comparison between input and related output ability somebody For finish a work in range time Which determined. Improvement productivity Work Which Good No meaningful that workerswork more long or morehard. But more on implementation management Which more Good. Productivity worker can also influenced by age, type sex, burden Work And environment. Body for worker need nutrition Which Enough to complete burden his work. Nutrition from food Which needed For consumed worker will increase in line with burden Work a worker.Wrong One factor Which can influence productivity for worker is Nutrition Work. Nutrition Work is substance Which contained in a food Which originate from material food Which needed by workers for fulfil his needs in accordance with environment Work And typehis work (Asih media et al. 2023). Nutritional adequacy with valueappropriate calories can support capable workers energized enough finish his work. workers meal processing done with planninguntil presentation that meetsadequate calorie needs and nutrition worker. Part big timefulfillment of workers' needs is in period a powerWork currently in hours Work.

Aspect main from nutrition Work is ensure worker get calorie needs in accordance with the level activity physique And demands his job Nutrition Which appropriate play role important in guard balance energy body Which on its turn influence level Power Work. Nutrition Work Which Optimal can also increase power stand physique worker to pressure and stress that may arise in environment Work Every individual have nutritional needs Which unique And difference This influenced by a number of factor. Age is factor Which play a role important in determine a person's nutritional needs Children, teens and adults have different nutritional needs Because stages development his body Also different. Besides That, size body Also influence need a person's calories.

A person who has a bigger body big Possible need more Lots energy For guard functionhis body Type sex Also is factor Which significant, because of women's nutritional needs and Men can be different, especially regarding with need nutrition special like iron in women Besides these factors, types of work Which lived by somebody Also play a role in determine need its nutrition. Work physique Which need activity heavy Possible need more Lots calories than work Which dominant more Lots Sit down in room. Besides That, condition special Which Possible experienced by a worker, like pregnancy or conditioncertain health conditions, can affect nutritional needs (Muhammad Dwi Hidayatullah 2024). Environment Work Which extreme onbasically full of pressure andinvolving working conditions andlife Which challenge. Incontext start from exploration roomspace to disaster response person must maintain performanceunder pressure, and functioningwith source Power Which limited. Criteria type work in a way roughaccording to FAO/WHO is asfollowing (classification This need modification in various countries): (1) Light: man: employee office, professional (doctor, lawyer, accountant, Teacher, architect, etc.), waiter shop, unemployment; (2) Women: employee, employee office, Housewives, teachers, etc; (3) Currently: man: worker light industry ,students, worker building, Armed Forces Which No active in field, fisherman, etc. Women: industrial workers light, housewife, student And laborer shop; (4) Heavy: man: bear farmer, laborer forest, Armed Forces in field, worker mine, laborer factory steel, puller cart/rickshaw (very heavy). Woman: laborer farmer, dancer, athlete, worker construction building (very heavy).

Activity light for example: a professional (Teacher, doctor, architect, lawyer, accountant, etc.), worker office, guard shop, And unemployment. Activity day for example: worker industry, students, angler, police in condition safe, soldiers are not at war, worker building. Activity heavy for example: worker rough, part big work farmer, worker mine, athlete (runner, player football ball, swimmer), worker forestry. Activity very heavy for example: blacksmith, lumberjack, puller pedicab/cart goods, laborer building, coolie factory, worker dismantler load on harbor. Requirements energy For factor growth taken into account in accordance by age group, due to factors age determine currently the occurrence growth Which comprehensive from network body, like growth new bones, new organ growth such as teeth, as well as increased volumefluid body (Wiwik et al. 2019).

Condition temperature environment Work Which extreme covering hot And cold Which is at outside

limit human ability to adapt. However in a way general can determined limit ability And limit tolerance Which allowed For man adapt, with temperature environment in extreme conditions with determine the tolerance range for temperature environment Work On high ambient temperature above 34<sup>0</sup>C, Where on condition This body get hot from radiation from environment. Whereas matter Which on the contrary happen temperature environment low (more low from from temperature body norm,37 -380C, (care body temperature), then the body heat will go out. with method evaporation (evaporation), And expiration, so that body can lose heat.

## Methods

This article was written with use method literature review. The article being reviewed is Article Journal National Which obtained with do search through google scholar with say key “Nutrition Special Worker In the region Work Which Extreme”, Extreme Work Environment” And "Substance Nutrition Which Needed Workers in Extreme Environments”. Article search results via Google scholar obtained 20 articles findings. Criteria inclusion Which used in this literature review is article or journal Language Indonesia Which rise in prone to time 10 year last and relevant with topic discussion that is Nutrition Specifically for Workers in the Work Environment Which Extreme. Based on results journal selection in our google scholar only get 20 article Which including in criteria search Which relevant Which relate About Nutrition Special Which Required Worker In Environment Work Which Extreme.

## Results

Results review article Which has served in a way Details on Table 1

**Table 1.** Results Studies Nutrition Special For The Worker in Environment Work Which Extreme

No	Study	Method Study	Results
1	Workload Relationship, Length of Service, Nutritional Status With Work Fatigue in PT. Japfa Makassar (Beautiful Dear, Andi Surahman	Cross Sectional	Based on results study Which has done there is Index Time Body with category thin with category experience tired 100% And category not experiencing fatigue of 0%. Body Mass Index (IMT) category normal with category experience tired 43%, Body Mass Index (BMI) category is obese with category experience tired 100% And category No experience tired by 0% and Mass Index Body (BMI) obesity category with fatigue category 100% and category does not experience fatigue by 0%. Based on the results of the chi-square statistical test, the p value was obtained. value = 0.05, because the probability value $a < 0.025$ then H <sub>0</sub> rejected and H <sub>a</sub> accepted, which means there is a relationship between status nutrition with fatigue Work on worker in PT. Japfa Comfeed Indonesia Tbk Unit Makassar.
2	Hot Working Climate and Consumption Water Drink MomentWork Against	Cross Sectional	Based on results study Which has done regarding the relationship between hot working climate and water consumption drinking while working with dehydration in workers at PT. Temple Blossom

	Dehydration (Megayani Puspita Sari, 2017)		Pemalang part weaving, results shows that there is a relationship between hot work climate ( $p=0.00$ ) And water consumption ( $p=0.001$ )
3	Intake Overview Substance Nutrition Macro, Fiber, And Sodium Worker in PT. Crew Sir Site PT Mr. Masmindo Dwi Era (Gina Muj Mangosteen, Marini Amalia,ahideen Oops Dear, God bless you Amir, Nurhaedar Jafar, 2023)	Proportional Stratified Random Sampling	Results study show that, based on intake its energy, 35% own intake energy not enough, 58% Enough And 7% more. Based on intake protein, 15% Which own intake protein not enough, 42% Enough, And 43% more. Based on intake fat, 32% own intake fat not enough, 33% Enough, And 35% more. Based on intake carbohydrate, 62% own intake carbohydrates are lacking, 37% are sufficient, and 1% are excessive. Based on intake fiber, 99% own intake fiber less and 1% have normal fiber intake. Based on intake sodium, 14% own intake normal sodium and 86% had more sodium intake. Worker in Site Crew Sir PT Masmindo Bi Area own intake Eat Which Not yet balanced, including lack of carbohydrate and fiber intake, as well as excess intake of protein, fat and sodium. So that, recommended for worker so that can more pay attention to food intake by reducing consumption fat, protein, And sodium Which too excessive as well as add intake carbohydrate And fiber daily.
4	Climate Work And Nutritional status with Fatigue Work On Worker in Ballast Tank Part Repair Boat PT. X Surabaya (Yuli Suryaningtyas, Noorel (Widajati, 2017)	Cross Sectional	Based on results test determination known that climate Work And status nutrition influential to fatigue Work as big as 0.381 And factor Which most influence fatigue Work is climate Work. Results test regression linear obtained mark $p=0.012$ (climate Work) And $p=0.040$ (status nutrition). Mark $R=0.618$ show that second variable independent own the relationship that strong to the occurrence fatigue Work. Based on results test regression linear obtained mark $R^2$ (coefficient determination) as big as 0.381, It means 38.10% fatigue Work due to by climate Work And status nutrition, whereas the rest due to by factors other. Intake nutrition Which No in accordance, like as it is on study This that the workers No get nutrition Work in accordance recommendation Because quota given in form Money Eat will trigger the occurrence fatigue Work. Accumulation fatigue Work Which happen on worker will give impact bad.
5	Fulfillment Analysis Calorie Needs Based on Type Work On Workforce In Area Mine Lower Land Pt X Indonesia Indonesia (Siti Rachmawati, Ullyn Helvy Pravika, 2020)	Descriptive Quantitative	shown with mark the biggest 6 or 54 percent respondents have more nutritional status. None or 0 percent Respondent Which own status nutrition not enough. Meanwhile, 5 or 46 percent of respondents have the status nutrition normal. Results measurement calories on 28 menu food For Respondent average excess

			calories, only 3 food menus match 1 respondent and 2 food menus do not meet calorie requirements for 2 respondents. This is influenced by the needs calories for each person and the calorie value on the food menu different. Based on the results of the calculation of needs Calories are influenced by body weight and type of work that is done. In addition, the fulfillment of work calories that No appropriate can impact on problem health
6	The Effect of Hot Working Climate Against Dehydration In Worker In Part Dryer InPt. X (Eti Kurniawati, Rara Marisdayana, Entianopa, 2020)	Cross Sectional	Results study show that as much as 42.1% Respondent experience dehydration, average climate Work 29.429oC, 84.2% Respondent experience complaint fatigue currently, 71.1% Respondent No do physical activity and 60.5% of respondents did not consume water white > 8 glasses/day. Results analysis bivariate show that There is connection between climate Work heat (p=0.000), physical activity (p=0.023), water consumption white (p=0.010) with dehydration on worker part dryer PT Angkasa Raya Djambi in 2020. There is no connection between fatigue Work with dehydration on 6 The Effect of Hot Working Climate Against Dehydration In Worker In Part Dryer InPt. X (Eti Kurniawati, Rara Marisdayana, Entianopa, 2020) Cross Sectional Results study show that as much as 42.1% Respondent experience dehydration, average climate Work 29.429oC, 84.2% Respondent experience complaint fatigue currently, 71.1% Respondent No do physical activity and 60.5% of respondents did not consume water white > 8 glasses/day. Results analysis bivariate show that There is connection between climate Work heat (p=0.000), physical activity (p=0.023), water consumption white (p=0.010) with dehydration on worker part dryer PT Angkasa Raya Djambi in 2020. There is no connection between fatigue Work with dehydration on worker part dryer PT Space Raya Jambi year
7	Fish Processing River In Fulfillment Nutrition On Worker In Company X Hulu Oil and Gas: A Literature Reviews (Muhammad Bi May Allah's guidance, Anita Dear Sir, Novrikasari, Nur Dawn of Nature, 2023)	Systematic Literature Reviews	Processed fish river or water bid like fish catfish, cork, indigo, gourami, toman, catfish, tilapia in fulfil consumption daily protein, fat, And vitamin Which Good Because content nutrition that is protein Which average 18 until 20 grams each 100 grams as well as fat from 1 until 3 grams because in daily must consume around 60 until 70 grams protein And 50 until 75 grams fat The total depends on the condition of each worker. In fulfillment nutrition on worker specifically on worker migration assumed If worker man with heavy 60 kg And tall body 168 cm need protein daily as much as 65 grams And fat around 60 until 75 grams. Whereas on worker Woman with heavy

			55 kg And tall 158 cm with protein daily Which must consumed is 60 grams And fat around 50 until 65 grams. Matter This means consume fish water bid can fulfil nutrition from number adequacy daily Which has set. Content fish river Which own protein around 17 until 20 grams on each 100 grams can become intake Which capable fulfil need calories daily Which enter. However matter This Also depends from condition body from each worker until burden Work Which done
8	Relationship between Nutritional Status, Burden Work, Intake Energy And Macronutrients With Fatigue Work In Production Power (AnisDear, Dyah Nur Subandriani, Yuwono	Cross Sectional	There is connection Which significant between burden Work with fatigue Work (p-value = 0,000), And No there is a significant relationship between nutritional status (p- value = 0.538), energy intake (p-value = 0.300), intake protein ( p-value = 0.077), intake fat (p-value = 0.199), and carbohydrate intake (p-value = 0.601) with fatigue Work.
9	Connection Between Burden Work And Intake Calories With Work Fatigue On Power Work Demolish Load In Harbor Bitung Ocean (Ika Daughter Andiani, Paul AT Kawatu, Budi T. Ratag, 2018)	Observational Analytic with Use design Cross Sectional.	Results from table about connection between intake calories with fatigue work on power Work demolish load in harbor ocean Bitung, obtained results analysis bivariate with use test spearman rank that is p value=0.000 indicates that water has a relationship between intake calories with fatigue Work with mark correlation as big as 0.502 Which means direction correlation is positive with strength correlation Which currently. Results This show that fatigue Work Which heavy Lots experienced by worker Which intake calories not enough. The more not enough level adequacy calories so will the more tall level fatigue Work Which felt by worker because of power Work demolish load at the port ocean Bitung own work Which including heavy And need energy Which more. Intake calories Which not enough will cause body lack glucose. Solution glycogen will produce sour lactate, so that If intake calories not enough so sour lactate in body will pile up. Accumulation sour lactate the will cause fatigue due to muscle difficulty contract (Santoso 2009)
10	Connection between Age And Status Nutrition with Work Fatigue on Worker Field PT Harbor Indonesia IV (Limited) Branch Bitung (Marsella D. Amen Paul A. T. Wire Marcella D. Amisi, 2019)	Observational Analytic And Design Cross Sectional	Results study get Respondent Which own status nutrition normal as much as 58% And status nutrition No normal as much as 42%. Respondents study This own activity Work Which congested as worker field, because they have to prepare for operation machinery and machine maintenance, providing usage material burn oil, And repair system electrification. Density Work Which experienced Respondent cause the clock Rest No determined Which tend

			<p>result fatigue, furthermore influence status nutrition worker. According to Srini, status nutrition Which Good with amount intake calories in amount And time Which appropriate effect on workers' work performance. On the contrary, status nutrition not enough or excessive And intake calories Which No in accordance with amount and time cause low resistance Work</p>
11	<p>Connection Burden Work, Pattern Eating, Status Nutrition to Productivity Work on Doctor And Nurse In RS XYZ Sumatra South (Putu Ratih Wijayanti, Viera Zakiyyah Muthohharoh, Ory Barrel Fitkarani, Innocent Bernardo, 2024)</p>	<p>Quantitative with use Structural Equation Modelling (SEM) Partial Least Square (PLS)</p>	<p>Influence Pattern Eat to Productivity Work own mark T statistics of 2,100 &gt; 1.96 And P value as big as 0.036 &lt; 0.05. By Because That, can concluded that eating patterns have a significant positive effect to Productivity Work, so that H2 accepted. The Influence of Nutritional Status on Work Productivity own mark T statistics of 3,822 &gt; 1.96 And P value as big as 0,000 &lt; 0.05. By Because That, can concluded that the workload has a significant positive effect to Productivity Work, so that H3 accepted. Based on results data study which has done For answer formulation problem Which Already described then the results are obtained after data processing Burden Work influential positive to productivity Work on doctor And nurse in House Sick XYZ Sumatra South. Pattern Eat influential in a way positive to productivity Work on doctor And nurse in House XYZ illness Sumatra South</p>
12	<p>Influence Status Nutrition to Level Fatigue Worker PT. Maruko International Indonesia (Fatmawati Hamid, The majority Regards, Firmita Dwiseli, Nurgazali, 2024)</p>	<p>Proportional Sampling</p>	<p>Based on the research results and discussion it is known that nutritional status significant affect work fatigue in workers part production PT. Maruko International Indonesia. As for big influence Which given status nutrition against work fatigue, namely 3.1% while 96.9% is influenced by factors other Which No investigated on study This. No fulfillment nutrition Which sourced from consumption food every day on workers ' bodies will result in negative impacts on the worker's body, including physical ability decreased, body's defense against disease decrease, No can concentrate on Work, easy experience fatigue, And not enough motivation (Jannah And Tualeka, 2022). Need nutrition Which Good And fulfilled can give a positive influence on the degree health, efficiency And resilience body power Work. Workers who have malnutrition conditions experience obstacle in do activity Because happen decline and slowdown motion (Wulandari, 2022). Worker with status nutrition</p>

			the good one (normal) will own resilience body And capacity Work Which more Good, whereas a worker with status nutrition not enough or more will own resilience body And capacity Work Which No Good so that will easy feel Tired.
13	Connection Between burden Work And Nutritional Status With Complaint Fatigue Work On Nurse Installation Take care Road In Rsi Jemursari (Goddess Fallout Retnosari, Endang Dear, 2017)	Cross Sectional	Based on results study on 30 nurse in installation take care road RSI Jemursari Surabaya, known that 73.33 % age Respondent not enough from 30 year, 23.34% Respondent aged 30-40 year, And 3.33% Respondent aged more from 40 year. Status nutrition normal most Lots owned by 63.4 % respondents, However Still found Respondent with status nutrition thin (23.3%) And fat (13.33%). A worker with condition nutrition Which Good will own capacity Work And resilience body Which more Good compared with worker Which status nutrition not enough And more. Worker need food Which nutritious For maintenance body, For repair from cells And network, For growth until certain times and for carry out activities including work. Lack nutrition have impact Which negative Because person Which suffer lack nutrition specifically calories will influence ability Work And time For finishing the work is getting longer so that productivity decrease.
14	Connection Between Status Nutrition With Fatigue Work Home Nutritionist Sick In Region Sukoharjo (Angdelakirana Application Sary, Luluk Ria Rahma, 2023)	Cross Sectional	Based on table 3 can seen that found Expert Nutrition Which own status nutrition category normal with fatigue Work level low a number of 6 person (17.6%), fatigue Work level currently a number of 8 person (23.5%), fatigue Work level tall a number of 2 person (5.9%). Expert Nutrition Which own status nutrition category No normal with fatigue Work level low a number of 1 person (2.9%), fatigue Work level currently a number of 15 person (44.1%), fatigue Work level tall a number of 2 person (5.9%). On results analysis test correlation between status nutrition (IMT) with fatigue Work on Respondent obtained mark significance as big as $0.040 < 0.05$ . Can interpreted Hey rejected that is existence connection significant between status nutrition with fatigue Work Expert Nutrition House Sick in Region Sukoharjo. Based on mark r count (pearson correlations) obtained number coefficient worth positive, that is as big as 0.354 Which It means correlation between status nutrition with fatigue Work Can it is said low or weak.

15	Connection Nutritional Status and Intake of Substances Nutrition with Work Fatigue On Worker Industry In Industry House Ladder Smelting Aluminum Metal Raya Indramayu Year 2018 (Natizatun, Tayong Siti Nurbaeti, Sutangi. 2018)	Cross Sectional	Based on table 5 obtained (P-Value) as big as 0.001 Because mark P-Value <0.05 so that can concluded that There is connection between intake substance nutrition with fatigue Work on worker industry in Industry House Smelting Ladder Aluminum Metal Raya Indramayu Year 2018. Results study to describe intake substance nutrition Respondent Where 66.7 % respondent experience intake substance nutrition Which not enough. Intake energy become the main factors needed by workers to do activity general And Also For carry out Work. Matter the can very influence ability somebody in do his activities. General fatigue is usually characterized by decreased will For Work Which due to by Because monotony, intensity And duration Work physique, condition environment, causes mentally, status health And nutritional status. Normal nutritional status is very helpful for energy work in carrying out their work. Nutritional needs which is sufficient will produce energy so that power Work No will lack energy Which can cause fatigue.
16	Energy Intake Relationship, Protein, Nutritional Status, And Ambient Temperature With Work Productivity (Study) To CV Workers. Plastic Industry Babatan Ungaran, Regency Semarang 2018) (Safina Andita, Dina RP, Ronny Aruben, 2018)	Cross Sectional	Based on results study mark correlation Rank Spearman between intake protein with productivity work is -0.32 with a significance level of 0.030 on level level trust 0.05. From calculation obtained mark significance as big as 0.030. Based on results statistics connection between intake protein with productivity Work own connection Which negative because the employee only answered according to what he remembered What Which they Eat moment interview recall. Matter the make data For consumption energy Can different from Which Actually they Eat Because they not enough Can For to describe in a way details food Which they consumption And only answer as he recalls just And can cause bias in study this. main energy is not from protein, by Because That worker Which has sufficient intake his energy will still productive in Work although intake protein still classified as not enough
17	Level of Substance Nutrition, Activity Physique, And Fitness Cardiorespiratory Employee of PT. Indocement Bogor (Charisma Tamimi, Forester ,2015)	Cross Sectional	No there is difference between level adequacy energy, protein, fat, And carbohydrate on second group ( $p>0.05$ ), although level adequacy energy And substance nutrition on group roomy tend more Good compared to group office. Part big (78%) subject employee office And roomy experience deficit energy. Matter the followed with level adequacy protein (69%, 54%) And carbohydrate (72%, 63%) Which deficit on

			<p>subject employee office And roomy. Part big (44%) subject employee office experience deficit fat whereas 41% subject employee roomy own adequacy fat Which normal. Employee should more pay attention to the type and amount of food consumed so that can fulfil need nutrition a day-day. Role company Also required in fulfillment need substance nutrition employee. Company can add amount canteen Healthy on every division or can provide food on time for meals interlude so that can help increase fulfillment need substance nutrition employee. There is difference activity physique second group employee Which investigated (p0.05), although average VO2 max on group roomy morehigh (24.4±7.6mL/kg/min) compared to group (22.9±7.5mL/kg/min). Employee should can increase fitness with method increase activity physique with more utilise facility as well as program fitness Which there is in PT. Indocement</p>
18	<p>Overview of Nutrient Intake, Nutritional Status, And Work Productivity At Worker Factory Coconut Palm oil Bagerpang Estate Pt. Pp. Lonsum 2013 (Farah Marlinda Syam, Zulhaida Lubis, Mhd. Arifin Sir, 2013)</p>	Descriptive	<p>Energy needed For do movement And physical work and moving processes within the body. Energy can obtained from carbohydrate, protein And fat which is a nutrient that produces energy. In addition Therefore, iron is one of the micronutrients that very needed by body. Although amount the need is small, but iron deficiency will cause anemia nutrition iron. Anemia can lower performance physique, obstacle development, reduce cognitive, and can reduce endurance body. Based on results study got that Work productivity of Bagerpang Estate factory workers is at on category Enough And Good. Worker ymag own level adequacy energy And protein Which Normal people are more likely to have work productivity Which Good that is as much as 75.8% worker on level normal energy sufficiency and 80.0% of workers who have normal protein adequacy levels. At this level adequacy energy And protein Which deficit, evaluation productivity Work on worker factory coconut palm oil Bagerpang estate is also still in the fair and category good. It can be concluded that the level of adequacy energy And protein No influence productivity Work</p>
19	<p>Connection Intake Substance Nutrition Macro, Quality Sleep And Activity Physique With Status Nutrition On Employee</p>	Cross Sectional	<p>Based on results analysis multivariate obtained variable Which own influence significant to status nutrition employee shift is activity physique (p=0.001) And carbohydrate intake (p=0.007). The proportion of nutritional</p>

	Shift At Pt. Pajitex (QonitaAmalia Zulfa, Endo Dardjito, Teguh Jati Prasetyo, 2022)		problems in shift employees are quite high at 21.8% experiencing severely obese, 19.5% mildly obese and 5.7% malnourished. Variables intake substance nutrition macro, quality Sleep And activity physique become part from style life Which relate with status nutrition employee shift in PT. PAJITEX
20	Factor Which Relate With Work Fatigue Subjective On Nurse In HOSPITAL Dr. Mohammed Soewandhie Surabaya (Dita The Governor, Abdul Rohim Tualeka, 2014)	Cross Sectional	Results study show that nurse in HOSPITAL dr. Mohamad Soewandhi majority experiences fatigue is nurse with status nutrition normal. However Still found also nurse with status nutrition more Enough Lots (39.5). Fatigue Which experienced part big nurse in matter This is level fatigue currently. Nutrition Work is giving nutrition Which applied to public worker with objective For increase degrees health, efficiency, And productivity Work Which as high as possible. In effort maintaining the health of workers, companies should notice adequacy nutrition his workers every day (Tarwaka, 2004). Body in do work need energy. Capacity Work can disturbed if there is a shortage, either quantitatively and qualitative. Balance between intake energy And output Which must issued very required. Nutrition Which Good just No Enough, For That required existence condition body Which Healthy also so that nutrition can digested And distributed by organ body (Tarwaka, 2004). According to results test statistics correlation Spearman connection between nutritional status and nurse fatigue at dr. Mohamad Soewandhie obtained a p value = 0.000 $\alpha = 0.05$ ( $p < \alpha$ ) so There is connection between status nutrition with fatigue felt by nurses. So that it can concluded that status nutrition is factor Which relate direct with fatigue Work.

**Discussion**

Based on the results of journal selection from 20 journal or article Which worthy in review. The journal used for literature review This is journal published over a 10 year period final with overall journal own method Cross Sectional. Journal Which will in review is journal Which discuss about Nutrition Special For Worker in Environment Extreme Which part large from the results of the reviewed journals discuss about work in a

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number of sector Which Can it is said classified as environment Which extreme

Nutrition Work is substance Which contained in a food Which originate from material food Which needed by worker For fulfil his needs in accordance with environment Work And type his job. Aspect main from nutrition Work is ensure worker get need calories Which in accordance with level activity physique And demands his job Nutrition right play role important in guard balance energy body Which on its turn affect the level of work capacity. Nutrition Work Which optimal Also can improve the physical endurance of workers to pressure And stress Which Possible appear in environment Work Every individual own need nutrition Which unique And difference This influenced by a number of factor.

Results study Which done by Arini Grace Sari (2017) stated that there is a relationship between calorie intake and fatigue Work. Results the show the more not enough level adequacy intake energy so the more heavy level fatigue Work. Results study Which done by Andiani (2018) in Harbor Ocean Bitung Which state that there is connection between calorie intake with work fatigue. Results This show that Among the research conducted by There is the relationship between energy intake and feeling fatigue on officer gas station operator general amber ketawang Yogyakarta with results test statistics 0.519 ( $p > 0.05$ ). The Light (2015) Also stated there was no intake relationship food (calories) with excess Work worker in House Sick based on test alternative Fisher's Exact Test with mark significance  $p = 0.104$

According to study Thwaite et al (2020), pattern Eat Which No Good can interfere with physical health and mentally And nurse, so that can cause depression, disturbance anxiety, and stress. In addition, the pattern Eat Which bad can increase number pain And lower productivity Work. According to research by Nahm et al. (2012), Which state pattern Eat No regular on doctor and nurse shifts can cause eating disorder And contribute in make food choices the bad one. After finish shift, most doctors and nurses will consume comfort food in large quantities and then rest or sleep. This is can contribute to the addition heavy body And decline work productivity. According to research Fereshteh et al (2021), pattern Eat Which bad is factor risk obesity And syndrome metabolic. According to research by Bette et al (2016), night shift work can cause disturbance rhythm circadian And pattern Eat power health, so that cause problem health And lower work productivity.

According to study Paz et al (1997), For know influence nutrition to performance doctor And nurse who works in the hospital on shifts Evening, Which consume protein increase whereas doctor And nurse Which consume carbohydrates decrease, so they feel sleepy in O'clock Work, experience decline productivity Work. According to study Hakan (2020), when doctor And nurse experiencing health problems due to nutritional problems, causing loss power, so that doctor And nurse take leave, accident Work increase Because lack of concentration Work And the decline work productivity. According to research Handsome (2013), Wrong One method For increase productivity work by maintaining consumption patterns food. If the body lacks substances nutrition, specifically energy And protein, cause flavor hungry And in certain period of time body weight will decrease Which accompanied by with the decline productivity Work, whereas if nutrients are excessive, cause obesity so that affect the movement to be not fast And active. According to study later

Tarwaka (2019) “ Repair The nutritional status of workers has a purpose use give balance between need nutrition And calories with demands And burden Work power Work”, so Can minimize complaints of work fatigue as well as can upgrade productivity power Work..

## Conclusion

Nutrition Work is substance Which contained in a food originate from material food Which needed by worker For fulfil his needs in accordance with environment Work And type his job. Results study Which done by Andiani in Harbor Ocean Bitung Which state that there is a relationship between calorie intake with fatigue work. Results This show that fatigue Work which many workers experience Which intake calories not enough. Among the research conducted by Bi Julia Which state that No There is connection between intake energy with feeling fatigue on officer operator public gas station Amber the owl Yogyakarta with results test statistics 0.519 According to Thwaite et al research, dietary patterns Which No Good can bother health physique And mentally And nurses, so that it can cause depression, anxiety disorders, and stress. According to Fereshteh's research et al,

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