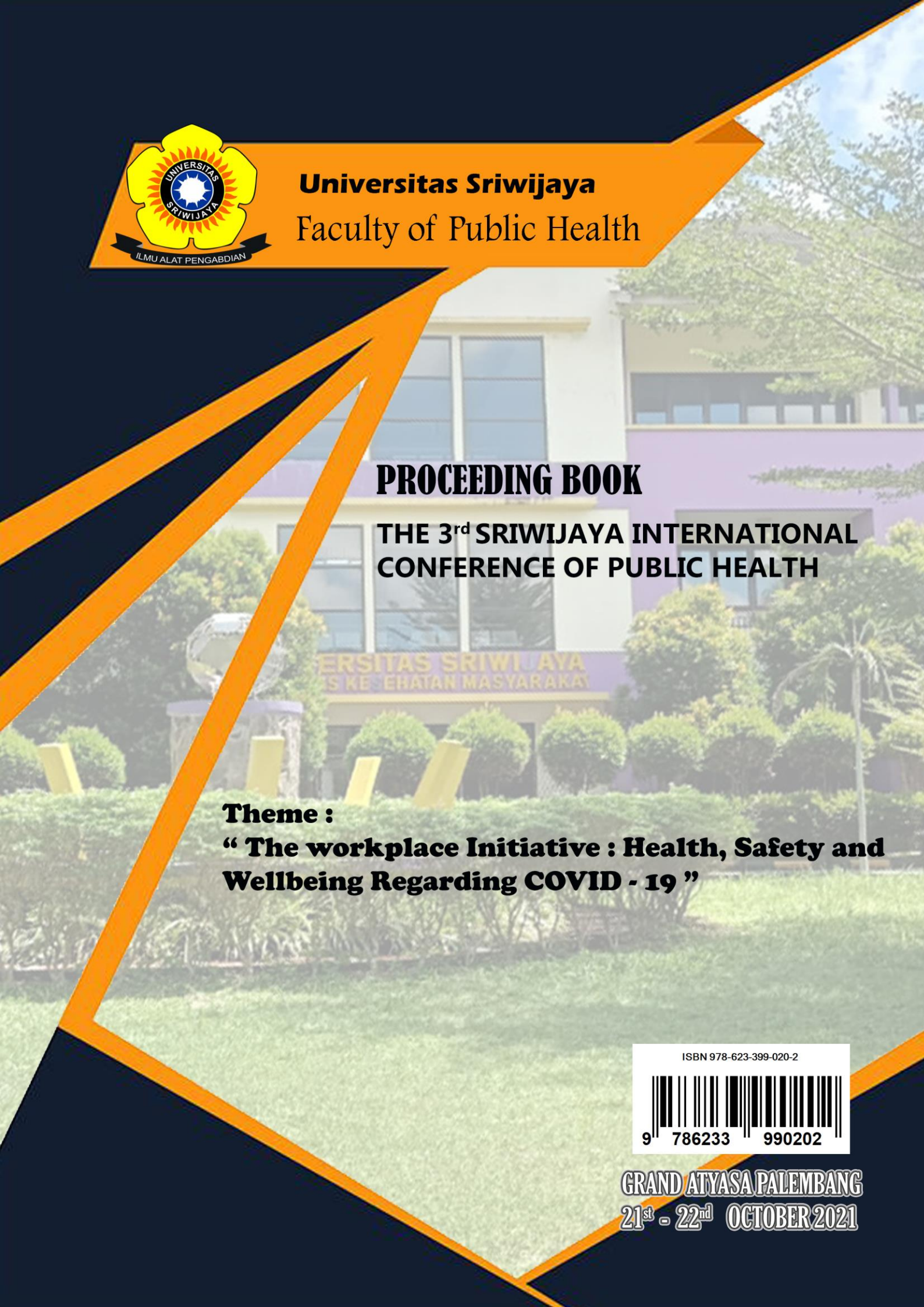

Universitas Sriwijaya

Faculty of Public Health

PROCEEDING BOOK

THE 3rd SRIWIJAYA INTERNATIONAL CONFERENCE OF PUBLIC HEALTH

Theme :

" The workplace Initiative : Health, Safety and Wellbeing Regarding COVID - 19 "

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21st - 22nd OCTOBER 2021

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The Work Place Initiative: Health, Safety and Wellbeing Regarding COVID-19

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THE 3rd SRIWIJAYA INTERNATIONAL CONFERENCE ON PUBLIC HEALTH

The Work Place Initiative: Health, Safety and Wellbeing Regarding COVID-19

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PREFACE

On behalf of the organizing committee, I am delighted to welcome you to the 3nd Sriwijaya International Conference on public Health (SICPH 2021) during 21th october 2021 at Palembang South Sumatera, Indonesia. The SICPH 2021 is international conference organized by Faculty of Public Health, Sriwijaya University (UNSRI). I would like to extend my warmest welcome to all the participant of The SICPH 2021 under the theme ***"The Impact of Climate Change on Infectious Disease Transmission".***

The SICPH 2021 consists of keynote sessions from well known expert speakers in the field of public health, and academic paper sessions (oral presentations) who are coming from several region. This conference seeks to bring together academics, public health professionals, researchers, scientists, students and health stakeholders from a wide range of disciplines to present their latest research experience and further development in all areas of public health. We hoped that this conference will be usefull platform for researchers to present their finding in the areas on multidisciplinary realted to public health and health system issues.

This conference will provide opportunities to exchange ideas, knowledge, and development of the latest research among the participants. We will publish the paper as output from the SICPH 2021 in proceeding book with ISBN and selected paper will be published in Jurnal ilmu kesehatan masyarakat- SINTA 3 (a nationally-accredited journal). The SICPH 2021 is being attended by about 50 participants. I hope you enjoy the conference.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any govermental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The conference committee expresses its gratitude towards all the keynote speakers, authors, reviewers, and participanst for the great contribution to enssure the succes of this event. Finnally, I sincerely thank all the members of the organizing committee who have worked hard to prepare this conference.

Palembang, October 2021

Chair,

Anita Camelia, SKM., MKKK.

PREFACE

First of all, let us thank God, the Almighty, who has given His grace and guidance so that the 3rd Sriwijaya International Conference of Public Health (SICPH) with the theme of The Workplace Initiative: Health, Safety and Wellbeing Regarding Covid:19 can be held successfully. I welcome all of you to this seminar which has received great attention not only from university, but also other communities to submit papers to be presented in this seminar. I express my highest gratitude and appreciation the presenters.

The conference is divided in two session, the first session is speeches and the second session is round table discussion. In the first session, the invited keynote speakers were Prof. Dr. Tan Malaka, MOH, DrPH, SpOk, HIU (A Professor from Medical Faculty Universitas Sriwijaya), Prof. Dr. Retneswari Masilamani (University Tunku Abdul Rahman, Malaysia), Prof.Dr.Joselito L. Gapaz MD, M.PH(University of the Philippines) and Prof. Dr Tjandra Yoga Aditama, MHA,DTM&H, DTCE,SpP(C).FIRS (Professor from Griffith University, Australia)

Of course, this conference activity would not have succeeded without the support of all parties involved, as well as the presence of all participants in all regions in Indonesia and internationally. I especially thank to all the organizing committees for their hard work, perseverance, and patience in preparing and organizing this conference so that it can go well, smoothly and successfully.

Finally, through this conference let us extend the network and cooperation among all stakeholders of the public health sector, especially in Indonesia and in the world in general, to build a better public health world in Indonesia

Thank you for participating in this conference.

Dean of Public Health Faculty,

Universitas Sriwijaya

Dr. Misnaniarti, S.K.M, M.K.M

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RELATIONSHIP OF SLEEP QUALITY, EATING HABITS AND PHYSICAL ACTIVITY WITH NUTRITIONAL STATUS IN NIGHT SHIFT WORKERS AT PLTMH NIAGARA SOUTH OKU REGENCY

Rahma Zahara, Indah Yuliana,* Yuliarti, Amrina Rosyada, Windi Indah Fajar Ningsih
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ABSTRACT

Nutritional status is a nutritional need that must be met by every workforce. Workers who have less or more nutritional status will result in a decrease in the degree of health of workers so that it can affect work performance and concentration. The purpose of this study was to analyze the relationship between sleep quality, eating habits, physical activity with nutritional status in night shift workers at Niagara Microhydro Power Plant (PLTMH) PT. Nusantara Indah Energindo in the generation sector of South Oku Regency. This research is a quantitative study that uses cross sectional research design. The study sample was determined using the Total Sampling technique with a sample number of 35. Univariate and bivariate analyses were conducted on this study using the chi-square test. The results of the univariate analysis showed that as many as 54.3% of night hift workers had overweight nutritional status and the results of bivariate analysis showed that there was a significant association between energy adequacy levels (p=0.000) and carbohydrate adequacy levels (p=0.002) with nutritional status. Meanwhile, there was no significant association between sleep quality (p=1,000), protein adequacy (p=0.146), fat adequacy (p=0.096) and physical activity (p=1,000) with nutritional status. Based on research, it is expected that workers can apply balanced nutrition to my plate as one of efforts to maintain weight.

Keywords: *Nutritional Status, Sleep Quality, Eating Habits, Physical Activity*

ABSTRAK

Status gizi merupakan kebutuhan gizi yang wajib dipenuhi oleh setiap tenaga kerja. Pekerja yang memiliki status gizi kurang atau lebih akan mengakibatkan turunnya derajat kesehatan pekerja sehingga dapat mempengaruhi performa dan konsentrasi kerja. Tujuan penelitian ini ialah untuk menganalisis hubungan kualitas tidur, kebiasaan makan, aktivitas fisik dengan status gizi pada pekerja *shift* malam di Pembangkit Listrik Tenaga Mikrohidro (PLTMH) Niagara PT. Nusantara Indah Energindo Kabupaten OKU Selatan. Penelitian ini merupakan penelitian kuantitatif yang menggunakan desain penelitian *cross sectional*. Sampel penelitian ditentukan dengan mengunakan teknik *Total Sampling* dengan jumlah sampel 35 orang pekerja**.** Analisis univariat dan bivariat yang dilakukan pada penelitian ini menggunakan uji *chi-square*. Hasil analisis univariat menunjukkan bahwa sebanyak 54,3% pekerja *shift* malam memiliki status gizi *overweight* dan hasil analisis bivariat menunjukkan bahwa ada hubungan yang signifikan antara tingkat kecukupan energi (p=0,000) dan tingkat kecukupan karbohidrat (p=0,002) dengan status gizi. Sedangkan, tidak terdapat hubungan yang signifikan antara kualitas tidur (p=1,000), tingkat kecukupan protein (p=0,146), tingkat kecukupan lemak (p=0,096) dan aktivitas fisik (p=1,000) dengan status gizi. Berdasarkan hasil penelitian diharapkan pekerja dapat menerapkan gizi seimbang sesuai isi piringku sebagai salah satu upaya untuk menjaga berat badan.

Kata Kunci: Status Gizi, Kualitas Tidur, Kebiasaan Makan, Aktivitas Fisik

Introduction

Nutritional status is a nutritional requirement that must be met by every workforce to improve the level of health of workers that will affect work performance and concentration.[1] Based on Riskesdas RI (2018), nutritional status according to BMI in adult male population over the age of 18 years who have characteristics as a private employee worker, indicates that nutritional status classified as thin is 8.3% in the category of mild problems. Meanwhile, nutritional status with more weight there is 14.6% and obesity nutritional status there are 20.4% in the category of moderate problems and severe problems.[2]

Eating habits are one of the factors that can affect a person's nutritional status related to the environment in which he lives. The environment in which you live will shape the attitudes, beliefs and ways of food selection that will be done by a person.[3] Workers' eating habits are related to the adequacy of energy and macronutrients. Because, in doing a very important nutritional job is a nutrient that produces energy, namely carbohydrates, proteins and fats.[4]

In carrying out his work, a workforce needs to sleep with good quality sleep and sufficient energy intake as needed to maintain work capacity and reduce the level of labor fatigue in the workforce.[5] On average in each year adults experience sleep disorders about 20%-40%, and 17% of other adults experience serious sleep disorders. This is related to alternating work time or shift work.[6]

Physical activity is one of the things that can affect nutritional status. If a person has excess energy intake, but not balanced with physical activity will trigger weight gain. On the nutritional status of physical activity is beneficial to maintain the weight to remain ideal. Because, the body's activity will increase the body's metabolism. So that the energy reserves in the body in the form of fatty substances will be burned into calories. This leads to a link between physical activity and nutritional status.[7]

This is related to the research location at PLTMH Niagara PT. Nusantara Indah Energindo South OKU Regency, this company uses a shift work system. Most of the workforce works night shifts and the food consumed by workers is mostly traditional food according to the sociocultural of the local community. Therefore, researchers are interested in conducting research to find out the relationship of sleep quality, eating habits with nutritional status in night shift workers in PLTMH Niagara South OKU Regency.

Method

This research is quantitative research, analytical survey using cross sectional research design. This research aims to identify relationships between predetermined variables. The free or independent variables in the study were sleep quality, eating habits and physical activity and dependent variables were nutritional status. The population in this study was all night shift workers at PLTMH Niagara OKU Selatan which was 42 workers where 35 people worked night shifts. The research sample is determined by the Total Sampling technique. So, the entire population who work night shifts will be used as a sample of research, which is a number of 35 workers. The inclusion criteria in this study is that workers are willing to become resonden. Also, the inclusion criteria in this study are workers in a sick state (illness that results in respondents being unable to follow research procedures or are in hospital care). Data analysis is performed using computer statistics programs with univariate and bivariate statistical tests with *chi-square* tests.

Results

Table 1 shows that night shift workers the largest proportion of those aged 30-49 years is 62.9%, the level of night shift workers education the most proportion at the high school education level is 80%. Night shift workers who have good sleep quality are 57.1%, night shift workers who have a normal energy adequacy rate is 48.6%, night shift workers who have a normal protein adequacy rate are 60%, night shift workers who have a normal fat adequacy rate is 68.6%, night shift workers who have a normal carbohydrate adequacy rate is 45.7%, Night shift workers who have high physical activity are 77.1% and night shift workers who have overweight nutritional status are 54.3%.

Table 2 shows from bivariate results using the chi square test that there is a significant relationship between variable levels of energy adequacy and levels of carbohydrate adequacy with nutritional status. There was no significant association between variables in sleep quality, protein adequacy levels, fat adequacy levels and physical activity and nutritional status.

Table 1. Univariate Analysis Results

Variable	Total	
	Frequency	Percentage (%)
Age		
19-29 Years	12	34,3
30-49 Years	22	62,9
50-64 Years	1	2,9
Level of Education		
Elementary School	2	5,7
Junior High School	4	11,4
Senior High School	28	80,0
College	1	2,9
Quality of Sleep		
Poor	15	42,9
Good	20	57,1
Energy Adequacy Level		
Less	3	8,6
Normal	17	48,6
More	15	42,9
Protein Adequacy Level		
Less	2	5,7
Normal	12	34,3
More	21	60
Fat Adequacy Level		
Less	4	11,4
Normal	24	68,6
More	7	20
Carbohydrate Adequacy Level		
Less	6	17,1
Normal	16	45,7
More	13	37,1
Physical Activity		
Moderate	8	22,9
High	27	77,1
Nutritional Status		
Overweight	19	54,3
Normal	16	45,7

Tabel 2. Bivariate Analysis Results

Variable	Nutritional Status				Total		P-*value*	PR (95% CI)
	Overweight		Normal					
	n	%	N	%	N	%		
Quality of Sleep								
Poor	8	53,3	7	46,7	15	100	1,000	0,970 (0,523-1,798)
Good	11	55,0	9	45,0	20	100		
Energy Adequacy Level								
More	14	93,3	1	6,7	15	100	0,000	3,733 (1,727-8,072)
Less-Normal	5	25,0	15	75,0	20	100		
Protein Adequacy Level								
More	14	66,7	7	33,3	21	100	0,146	1,867 (0,869-4,012)
Less-Normal	5	35,7	9	64,3	14	100		
Fat Adequacy Level								
More	6	85,7	1	14,3	7	100	0,096	1,846 (1,120-3,043)
Less-Normal	13	46,4	15	53,6	28	100		
Carbohydrate Adequacy Level								
More	12	92,3	1	7,7	13	100	0,002	2,901 (1,543-5,455)
Less-Normal	7	31,8	15	68,2	22	100		
Physical Activity								
Moderate	4	50,0	4	50,0	8	100	1,000	0,900 (0,416-1,945)
High	15	55,6	12	44,4	27	100		

Discussion

There was no significant association between sleep quality and nutritional status. This study in line with research conducted by Prayogo (2018) showed that there was no significant association between sleep quality and nutritional status. In addition, the results of this study are also in line with nabawiyah research (2021) which showed that there is no association between sleep quality and nutritional status. Sleep quality is the quality of night shift workers' sleep in the last 1 month interval by measuring 7 indicators to determine good and poor sleep quality, such as subjective sleep quality, sleep latency, sleep duration, daily sleep efficiency, sleep disturbances, sleep drug use, and dysfunction of daytime activity. Poor sleep quality is experienced more by shift workers whose working life is less than 4 years than workers who have worked more than 4 years, it is considered a period of adaptation.

Energy is the result of the metabolism of proteins, fats and carbohydrates. The results of statistical test analysis showed that there was a significant association between energy adequacy levels and nutritional status in night shift workers. Energy adequacy levels were 3,733 times more likely to have overweight nutritional status compared to respondents who had less-normal energy adequacy levels. The energy intake consumed must be balanced with the needs of the body. Energy intake that is not balanced with the needs of the body and lasts a long time can cause nutritional problems. In addition, to maintain

nutritional status, the food consumed must be in accordance with the balanced nutrition pyramid or eating food according to the needs of each respondent and prevent the occurrence of unbalanced intake between nutrients.

There was no significant association between protein adequacy levels and nutritional status. This study is in line with research conducted by Ambarwati (2016) showing that there is no significant association between protein adequacy levels and nutritional status. This study is also in line with research conducted by Siwi and Paskarini (2018) showing that there is no association of protein adequacy levels with the nutritional status of workers. Based on the results of Woodley's research (1995) states that in the human body has no place as a storage area for protein reserves. So, if a person has a sufficient level of protein less or more will not affect nutritional status. Because, if there is excess protein intake will not be stored.[10]

There was no significant association between fat adequacy levels and nutritional status. This study is in line with research conducted by Siwi and Paskarini (2018) showing that there is no significant association between the level of fat adequacy and nutritional status in workers. However, the results of this study are not in line with Sugiyanto's (2017) study which showed that there is a significant association between the level of adequacy of fat and nutritional status in workers with a very strong correlation coefficient (r) value of 0.762. The higher the level of fat adequacy, the more likely the respondents experienced more nutritional status or obesity.[11]

Carbohydrates consist of two groups, namely simple carbohydrates and complex carbohydrates. The results of statistical test analysis showed that there was a significant association between carbohydrate adequacy levels and nutritional status in night shift workers. Carbohydrate adequacy levels were 2,901 times more likely to have overweight nutritional status compared to respondents who had less-normal carbohydrate adequacy levels. The level of adequacy of carbohydrates can affect nutritional status because excessive carbohydrates in the body will be stored as glycogen in muscle tissue and fat that will be stored in adipose tissue such as the stomach and the lower part of the skin.[12] Therefore, if excessive carbohydrate consumption in a person will be able to cause obesity. [4]

There was no significant association between physical activity and nutritional status. This study is in line with research conducted by Setyandari (2016) showing that there is no significant association between physical activity and nutritional status in workers. This is due to the physical activity of shift workers almost the same so it is difficult to analyze statistically. The results of this study are also in line with research conducted by Ambarwati (2016) showing that there is no significant association between

physical activity and nutritional status. However, the results of this study are not in line with the results of roring, posangi and manampiring (2020) research which states that there is a relationship between physical activity and nutritional status. The correlation coefficient of 0.358 indicates a moderate level of association that states there is a relationship between physical activity and nutritional status. Physical activity is one of the things that can affect nutritional status. If a person has excess energy intake, but not balanced with physical activity will trigger weight gain. [7]

Conclusions

The univariate analysis showed that 54.3% of night shift workers had overweight nutritional status and bivariate analysis showed that there was a significant association between energy adequacy levels and carbohydrate adequacy levels with nutritional status. Meanwhile, there was no significant association between sleep quality, protein adequacy levels, fat adequacy levels and physical activity and nutritional status. Based on the results of the study it is expected that workers can apply balanced nutritional fulfillment according to the contents of my plate, namely staple foods $^{2}/_{3}$ of 1/2 plate, vegetables $^{2}/_{3}$ of 1/2 plates, side dishes $^{1}/_{3}$ of 1/2 plates and fruits $^{1}/_{3}$ of 1/2 plates so that workers can limit carbohydrate consumption and consume more fiber and vitamins. So that it can maintain weight and overcome health problems such as overweight. Workers can also consume staple carbohydrate sources as much as 3-4 servings per day, 1 serving consists of 150 grams of rice or equivalent to 3 centong of rice, 3 medium fruit potatoes 300 grams or 11/2 cups of dry noodles 75 grams. In addition, workers can also eat other rice substitute foods such as cassava, yam, bread, brown rice, wheat, sago, bihun, taro and corn.

Acknowledgment

We thank the night shift workers at Niagara Microhydro Power Plant (PLTMH) PT. Nusantara Indah Energindo South OKU Regency has been willing to become a respoonden and provide support for this research.

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Conflict of Interest

The authors state that there is no conflict of interest in this research.

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