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THE RELATIONSHIP BETWEEN AGE AND ROOM TEMPERATURE WITH WORK STRESS IN ADMINISTRATIVE EMPLOYEES OF PG. PURWODADI MAGETAN

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ABSTRACT

Stress that occurs in the workplace is a feeling of pressure on employees that arises due to a lack of balance between individual abilities and the work environment. Employees face many challenges, such as the increasing amount of work and the need for knowledge that needs formal training, the high level of productivity and creativity expected. The purpose of this study was to analyze the relationship between age and physical environment with work stress in PG Administration employees. Purwodadi. This type of research is quantitative research with a cross sectional approach method. Data analysis using univariate analysis and bivariate analysis using Chi square test statistics. The population amounted to 47 administrative employees and a sample of 43 employees using proportional random sampling. The results of the bivariate test showed that there was a significant relationship between the independent variables, namely age (p-value = 0.008) and there was no significant relationship between the independent variables of room temperature (p-value = 0.760). The conclusion is that the room temperature variable has no relationship with work stress, while age has a relationship with work stress. Suggestions for PG. Purwodadi is to pay more attention to the burden and tasks given to employees specifically.

KEYWORDS *Age, Room Temperature, Work Stress*

INTRODUCTION

Stress is one part of life and is a common problem that occurs in humans that cannot be avoided. Stress can occur in every location both at school, family and work (Arsini et al., 2023). Stress that occurs in the workplace is a feeling of pressure on employees when facing work. Stress in the workplace can arise due to a lack of balance between individual abilities and the work environment(Supriyanto & Nadiyah, 2022)

Work stress is a result of the imbalance of demands and resources on a person, the higher the gap the higher the stress experienced, it can also be a threat (Asih et

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al., 2018) . Stress can threaten oneself when experiencing high levels of stress, the level of stress experienced depends on how a person responds to himself (Maha & Herawati, 2022).

Excessive levels of stress can affect job satisfaction, health problems and the intention of an employee to change workplaces (Issalillah et al., 2021) . Employees face many challenges, such as an increasing amount of work and the need for knowledge that needs formal training, high levels of productivity and creativity are expected. In addition, high mental workloads, constant technological developments, and the need for talent to adapt and learn continuously add stress to employees (Bolliger, 2022).

According to data from the *Health and Safety Executive (HSE)* based on a survey conducted by the *Labor Force Survey (LFS)* states that 875,000 workers suffer from stress, depression or *anxiety* due to work with a prevalence of 2,590 per 100,000 workers in 2022/2023. The number of administrative and secretarial jobs that experience stress, depression and anxiety is at 2,200 per 100,000 workers. Occupational stress, depression or anxiety resulted in 17.1 million lost work days. Occupational stress accounts for 49% of all work-related illnesses (HSE, 2023).

Based on a survey conducted by Gallup in Southeast Asia, 31% of workers experience work stress. The first rank is occupied by the Philippines at 45% followed by Myanmar at 39%. Indonesia is the country with the lowest number in Southeast Asia, with 21% of workers claiming to experience stress due to work. The amount of work stress is dominated by the female workforce and in workers who are less than 40 years old (Gallup, 2022).

There are three categories of work stressors: environmental, organizational and individual. Uncertain environmental factors in addition to affecting the organizational structure, can also be an influence on the level of stress experienced by workers. tasks, roles and personal demands are categories of organizational factors. While those included in individual factors are family problems, economics, personal problems and personal characteristics (Robbins, 2017).

Room temperature can cause stress conditions in employees who are divided into two temperature disorders in the human body, namely as a result of temperatures that are too cold (Hypothermia) and temperatures that are too hot (Hyperthermia). Hypothermic conditions have the most effect on work stress. The heaviest condition of hypothermia is *heat* stress, which is a stress disorder due to environmental air conditions more than normal temperature (>28 ^{O} C) so that humans cannot produce and dissipate body heat in a balanced manner.

There are several ways that can be done as an effort to prevent and control work stress. One of them is by doing a *stress copping* mechanism which is basically a way of solving problems. In *stress copping* it is necessary to manage situations that are too excessive, efforts to find solutions to solve life problems and also efforts to defeat and reduce stress. Which is a way of managing internal and external demands so that stress-causing factors are weakened so that work stress will not occur. *Copping stress* can be said to be a process of individuals doing something to reduce and eliminate situations that threaten their physical and mental health (Asih et al., 2018).

Solutions to reduce stress due to work are by changing the work environment and work tasks, maintaining comfort in employees while working, implementing flexible working hours, including employees to develop careers, creating a cohesive and fair team.

Work stress prevention efforts are needed as an effort to prevent employees from bad possibilities that occur. The way that can be applied is by measuring the level of work stress and analyzing related factors. With the description above, the researcher wants to conduct a study "The Relationship Between Age and Room Temperature With Occupational Stress in Administrative Employees of PG. Purwodadi Magetan".

Based on the above background, the problem formulation in this study is whether there is a relationship between age and room temperature with work stress in PG Administration employees. Purwodadi?

Analyzing the relationship between age and physical environment with work stress in PG Administration employees. Purwodadi.

Specific Objectives : (1) Identifying age in PG Administration employees. Purwodadi (2) Identifying air temperature in the work environment of PG Administration employees. Purwodadi (2) Analyzing the relationship between age and the incidence of stress in PG Administration employees. Purwodadi (3) Analyzing the relationship between air temperature and the incidence of stress in PG Administration employees. Purwodadi

The results of this study can be information and input to PG. Purwodadi related to work stress problems that occur in employees so that preventive efforts can be made to minimize cases of work stress. The results of the study are expected to be able to become a reference and reference in the STIKES Bhakti Husada Mulia Madiun library. The benefits of this research are for the researchers themselves to gain experience in analyzing problems regarding work stress. The originality of this research can be known from similar research to the research conducted by the author, including:

Table 1. Research Authenticity

No.	Research	Research Title	Place of Research	Research Design	Variables	Research Results
1.	Isna Aglusi Badri	THE RELATIONSHIP BETWEEN WORKLOAD AND WORK ENVIRONMENT WITH WORK STRESS ICU AND IGD ROOM NURSES	Batam	*Cross sectional correlation*	Free: workload, work environment Bound :job stress	There is a significant relationship between workload and work environment with nurses' work stress ($p<0.05$).
2.	Prima Virani Kandi, Ni Wayan Sukmawati Puspitadewi	The Relationship Between Quality of Work Life and Job Stress at Company Employee X	Surabaya	Descriptive quantitative	Free :quality of work life Bound: job stress	There is a significance result of -0.621, there is a significant relationship that occurs between the

						quality of work life variable and the work stress variable.
3.	Indah Yuliani, Maulida Putri	Factors Associated with Job Stress in Employees at the Jagakarsa Village Office, South Jakarta	South Jakarta	Quantitativ With a *cross sectional study* design	Free: Age, gender, tenure, social support, self-appraisal, focal control, role demands, tasks, role conflict, interpersonal relationships. Related: stress	out of 10 variables, only the work conflict variable has a significant relationship with work stress (p-value = 0.015).

RESEARCH METHOD

This research uses quantitative research methods, which is a type of research methodology used to study specific communities and specimens. In this study, it uses the type of relationship research that explains how variables relate to each other (Nusalam 2013).

This research was conducted with a *Cross Sectional Study* approach, which means that measurements were taken at the same time. The purpose of using this *Cross Sectional* design is to determine whether there is a correlation between 2 types of variables with a questionnaire measuring instrument. This research is correlation or association, meaning to find out the correlation between variables with the aim of finding, providing explanations, estimating and testing based on existing theories (Nusalam, 2017). This study analyzes the relationship between age and physical environment with work stress in PG Administration employees. Purwodadi.

Population is defined as the overall research component including all objects and subjects that have certain characteristics. The population consists of all people, animals, events, or objects that live together in a planned manner to become the target of research results (Amin et al, 2023) . Researchers determine the population, namely administrative employees of PG. Purwodadi with a total of 47 employees.

The sample is an object that must be studied and considered to represent the entire population (Notoadmodjo, 2018). Due to limited funds, energy, and time researchers can take samples from the population to represent (Darmanah, 2019).

administrative employees of PG. Purwodadi became the sample in this study. Determination of the sample of this study using the Slovin formula

The process of making decisions on part of the population to get a sample that matches all the objects in the study is a sampling technique. (Darmanah, 2019) . The sampling technique for this study is probability sampling which is random sampling giving equal opportunities to all population subjects as sample members (Sugiyono, 2017) . The method used for sampling is to use *proportional random sampling*, which is to determine sample members randomly on the condition that the population is homogeneous or close to homogeneous (Sahir, 2022).

Research Framework

The framework is a structure of the design of research activities to be carried out, or steps to be taken in solving the problems to be discussed, including who will be studied, and research variables (Hidayat, 2011). The research framework is as follows:

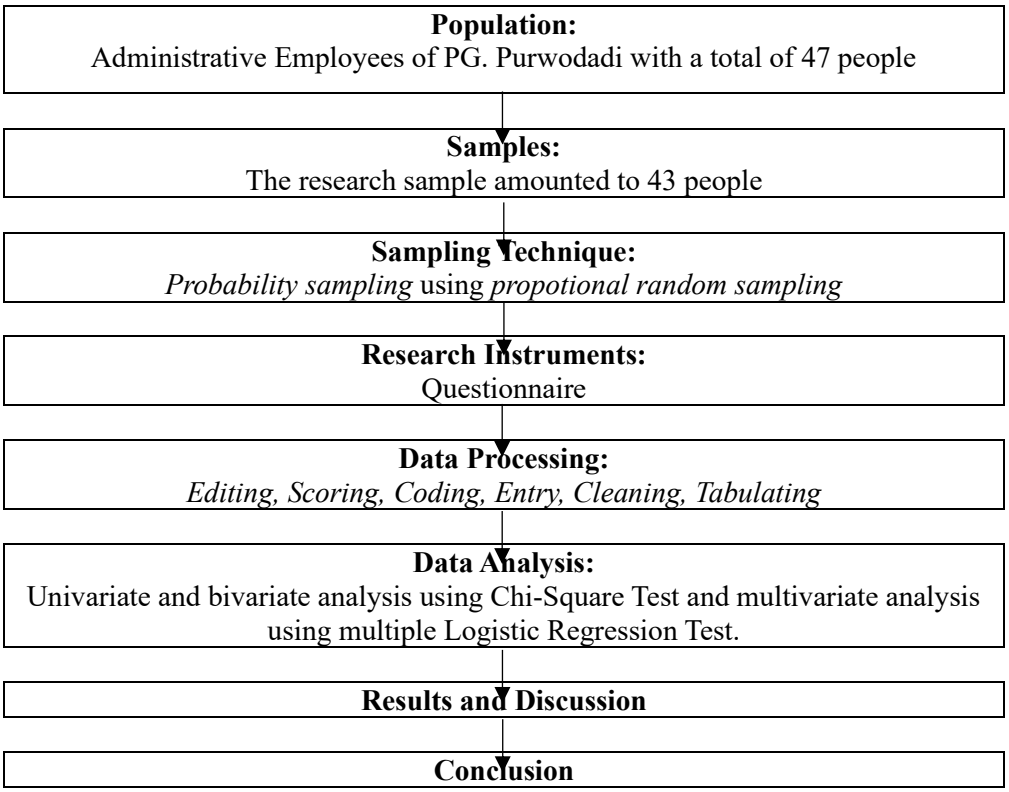

Figure 1: Research framework
Source: Primary data, 2024

Research variables are the main components that have been determined to be researched in order to obtain answers that have been formulated in the form of research conclusions (Sahir, 2022). In this study there are two types of variables, namely: (1) Independent or Free Variables : Independent variables are variables that influence and cause changes in other variables with the letter symbol X (Sahir, 2022) . The independent variables in this study are age and room temperature. (2) Dependent or Bound Variables : The dependent variable is a variable that is influenced and is the result of another variable with the letter symbol Y (Sahir,

2022) . The dependent variable in this study is job stress in permanent employees of PG. Purwodadi.

Operational definition is a definition that has been formulated by researchers to understand the method of estimating or determining variables. Operational definition is details about the limits of the variables studied or measured by these variables (Notoatmodjo, 2012a) . The following is a description of the operational definition in tabular form:

Table 2. Operational Definition

No.	Variables	Operational Definition	Parameters	Tools	Category	Data Scale
			Independent Variable			
1	Age	Calculations starting from birth to the age to be studied are supported by personal identification.	Age was calculated from the start of birth to the age at which the study was conducted. Mature (26-45 years old) Elderly (46-65 years old)	Interview with	0 = Mature 1 = Elderly	Nominal
2	Room Temperature	Office space must meet the health and comfort needs of the users of the room. To be able to meet the health and comfort requirements of office space temperature ranges from 23 ° C to 26 ° C.	PERMENAKER NO. O5 Year 2018 on occupational safety and health of the work environment sets the temperature standard for office space ranging from 23° C to 26° C. = Unsuitable (<23° C /> 26° C) = Corresponding (23° C-26° C.)	Observation sheet with Thermohygrometer measuring instrument	0 =Not suitable 1 =Suitable	Nominal
			Dependent Variable			
1	Work Stress	A condition of tension that occurs due to pressure and difficulties faced by employees that can cause stress in carrying out their work activities.	Workers fill out questionnaires with assessment results: Not stressed if the answer score is 25-75 Stressed if the answer score is 76-125	Interview with measuring instrument OSI-R Questionnaire TM (Occupational Stress Inventory -Revised Edition) 2008 which consists of 25 inquiry	0 = no 1 = stressed	Nominal

In the most important research is the technique for collecting data. The technique used must be correct and in accordance with the method used in order to obtain results in accordance with the objectives or initial hypothesis that has been determined (Sahir, 2022) . In collecting data, you can use primary data sources and secondary data sources. Primary data sources are data sources that are obtained directly by researchers while secondary data sources are sources that do not directly provide data to researchers (Sugiyono, 2015) . In this study, primary data was collected using a questionnaire instrument. What is meant by a questionnaire is data collection by providing questions or written statements addressed to respondents in order to get answers (Sugiyono, 2015).

Primary data is data that comes from the first hand. Primary data in this study were obtained from distributing questionnaires. The primary data source in this study were administrative employees of PG. Purwodadi. Data collection will be carried out in June 2024.

In this study, the primary data collection process used a questionnaire which is a tool for collecting data in the form of a collection of questions or written statements which are then distributed to respondents directly so that the results are clear and accurate. The questions and statements in the questionnaire are arranged according to the previous operational variables. The questionnaire as a tool to obtain respondents' opinions or responses regarding the relationship between age and physical environmental factors with work stress of administrative employees.

Secondary data is data that comes from other parties. Secondary data in this study came from PG Human Resources employees. Purwodadi. This study requires secondary data in the form of the number of employees from PG. Purwodadi .

Data analysis used in this study are: (1) Univariate Analysis : Univariate analysis aims to explain or describe the characteristics of each research variable. In general, univariate analysis only produces frequency distribution and percentage of each table. (Notoatmodjo, 2018). This study used the help of a computer *software* program to analyze univariate. (2) Bivariate Analysis: Bivariate analysis is performed on two variables that are considered related (Notoatmodjo, 2010). The purpose of bivariate analysis is to determine the significant relationship of the two variables.

In this study using the *Chi-Square test, it* was used to test what the level of significance was obtained from the respondents' answers so that the results obtained could be tested accurately (Delima and Paramita, 2019).

In this study to measure the variables of age with work stress and room temperature with work stress using the *Chi-Square* test with *continuity correction* reading of the 2 × 2 table because each variable has 2 categories.

The decision on the results of the statistical test by comparing the *p-value* and the α value (0.05), according to Umami (2019) the applicable provisions are as follows: (a) If the p value ≤0.05, the research hypothesis H_0 is rejected and $H_{(1)}$ is accepted, so that between the two variables there is a meaningful relationship. (b) If the p value is > 0.05, the research hypothesis H_0 is accepted and H_1 rejected, so there is no significant relationship between the two variables. (c) 95% CI does not cross the number 1 means it is related 95% CI crosses the number 1 means it is not

related.

To see the closeness of using the RP *(Prevalence Ratio)* test by looking at the score, as follows: (a) RP *(Prevalence Ratio)*< 1, meaning there is a relationship but the variable is not a risk factor. (b) RP *(Prevalence Ratio)*> 1, meaning there is a relationship and the variable is a risk factor. (c) RP *(Prevalence Ratio)*= 1, meaning that the independent variable is not a risk factor.

RESULT AND DISCUSSION

Purwodadi sugar factory is one of the Dutch East Indies sugar factories (PG) which was built in 1832. PG. Purwodadi is located in Palem Village, Karangrejo, Magetan Regency, East Java. At that time the sugar factory was under the management of Nederlandsche Handel-Maatschappij (NHM), a Dutch trading company that replaced the VOC. In 1959, it was taken over by the Government of the Republic of Indonesia and its management was handed over to the State Plantation Company (PPN), then in 1967 it was changed to PPN Baru which was led by a Director.

Based on Government Regulation No. 14/year 1968, in 1968 the status was changed to the State Plantation Company (PPN) which oversaw several sugar factories in one karesidenan under the name "Inspection of State Plantation Companies" Since 1968, PG Poerwodadie, which was located in one karesidenan with PG Soedhono, PG Redjosarie, PG Pagottan, and PG Kanigoro, was merged into one legal entity, namely the State Plantation Company XX (PNP XX) which was led by the Board of Directors and headquartered in Surabaya. PNP status changed to Limited Liability Company (Persero) in 1985 and PNP XX changed to PT Perkebunan Nusantara XX (Persero).

On March 11, 1996 PTP XX (Persero) together with other PTPs was dissolved. Based on PP No. 16/1996 dated February 14, 1996, PTP Nusantara XI (Persero) was formed which is a combination of the former PTP XX (Persero) with PTP XXIV-XXV (Persero). PTP Nusantara XI (Persero) is led by the Board of Directors domiciled at Jalan Merak No. 1 Surabaya. On October 02, 2014, the Minister of SOEs Dahlan Iskan made an announcement of the inauguration related to the Holding of Plantation SOEs from the Holding of Plantation SOEs. In 2011, PG Purwodadi planned to grind 297,229.8 tons of sugarcane (own sugarcane 84,479.8 tons and people's sugarcane 212,750.0 tons) obtained from an area of 3,969.2 ha (TS 1,064.2 ha and TR 2,905.0 ha).

The area not only covers a number of sub-districts in Magetan Regency, but also in Bojonegoro Regency. Sugar produced is projected to reach 20,783.7 tons (PG-owned 11,361.3 tons and farmer-owned 9,422.4 tons) and 13,375.4 tons of drops. PG capacity is 2,300.0 tth (excluding stopping hours) or 2,057.2 tth including stopping hours. Realizing the importance of people's sugarcane in meeting raw material needs, PG Poerwodadie strives to provide the best for farmers. A number of demonstration gardens were organized with the intention of becoming a vehicle for learning, both for PG officers and farmers, about best agricultural practices. The existence of demonstration farms also allows farmers to interact with PG regarding efforts to increase productivity in a sustainable manner.

The direction to achieve an average productivity of 8 tons of crushed rice per hectare is realized through the arrangement of the planting period, the arrangement of varieties (towards an ideal composition between early, middle, and late ripening of 30-40-30% in the 2010/11 TG), the adequacy of agroinputs, and the improvement of slash-and-transport management. The existence of the Western Region R&D centered at PG Poerwodadie, allows technology adoption and dissemination to run faster. Meanwhile, to overcome the possibility of pollution due to factory activities that have the potential to disturb the community, PG Poerwodadie continues to improve the integrated waste treatment plant, both for solid, liquid and air waste. The next hope is an *environmentally friendly* industry.

Respondent Characteristics

The following are the characteristics of respondents in PG administration employees. Purwodadi:

Gender

Table 3. Frequency Distribution of Respondents Based on Gender Group in Administrative Employees in 2024 PG. Purwodadi

No.	Gender	Frequency (f)	Percentage (%)
1	Male	22	51,0
2	Female	21	49,0
	Total	43	100

Source: Primary Data, 2024

Based on Table 3. it can be seen that male employees are 22 people (51.0%) and female employees are 21 people (49.0%). Gender is the differences between men and women that are seen physically, behavior and values labeled on men and women based on local social culture (Rosdiana et al., 2023).

Education

Table 4. Frequency Distribution of Respondents Based on Education Group in Administrative Employees in 2024 PG.Purwodadi.

No.	Education	Frequency (f)	Percentage (%)
1	HIGH SCHOOL	27	63,0
2	D3	6	14,0
3	Bachelor	10	23,0
Total		43	100

Source: Primary Data, 2024

Based on table 4. It can be seen that the education of high school administrative employees is 27 people (63.0%), D3 as many as 6 people (14.0%) and Bachelor as many as 10 people (23.0%). The level of education is an effort to increase knowledge with the aim of obtaining motivation and achievement, through education a person can make himself superior to others and will directly have an impact on improving employee performance in an organization (Irman, et.al, 2021).

Analysis Results

The following are the results of univariate analysis on PG production workers. Purwodadi Magetan:

Age Distribution of Administrative Employees of PG. Purwodadi

Table 5. Frequency Distribution of Respondents Based on Age Group in Administrative Employees in 2024 PG. Purwodadi.

No.	Age	Frequency (f)	Percentage (%)
1	Adult (26-45 years old)	24	55,8
2	Elderly (46-60 years old)	19	44,2
	Total	43	100

Source: Primary Data, 2024

Based on table 5. It can be seen that adult age (26-45 years) is 24 people (55.8%), elderly age (46-60 years) is 19 people (44.2%). According to (Lasut 2017) age is the age of the individual starting from the time of birth until the birthday.

Temperature Distribution of Administrative Employees of PG. Purwodadi

Table 6. Frequency Distribution of Respondents Based on Room Temperature Group in Administrative Employees in 2024 PG.Purwodadi.

No.	Temperature	Frequency (f)	Percentage (%)
1	Unsuitable (<23^{O}C/>26^{O}C)	15	34,9
2	Appropriate (23^{O}C - 26^{O}C	28	65,1
	Total	43	100

Source: Primary Data 2024

Based on table 6. It can be seen that employees who are in a room with an inappropriate temperature (<23OC /> 26OC) are 15 people (34.9%), the appropriate temperature (23OC - 26OC) is 28 people (65.1%). Room temperature is the temperature range that indicates a comfortable place for humans. Feeling cool and fresh at work will help speed up the body's recovery from fatigue after work. (Sudaryo, 2018).

Distribution of Job Stress of Administrative Employees of PG. Purwodadi

It is seen that administrative employees who are not stressed are 20 people (46.5%), and experiencing stress are 23 people (53.5%). Work stress is a result of the imbalance of demands and resources in a person, the higher the gap, the higher the stress experienced, it can also be a threat (Asih et al., 2018).

Bivariate Analysis Results

Bivariate analysis was used to determine the relationship between two variables.

The Relationship Between Age and Job Stress of Administrative Employees of PG. Purwodadi Magetan

It is known that 16 adult employees (37.8%) do not experience job stress, and 8 people (18.0%) experience job stress. Meanwhile, 4 elderly employees (10.0%) did not experience work stress and 15 people (34.2%) experienced work stress. Younger employees have better hearing and vision, better endurance and are able to move agilely than older employees (Zulkifli et al., 2019).

The results of the Chi Square test can be said that there is a relationship between age and work stress, the p value = 0.008 is less than α = 0.05. The results of the risk calculation obtained RP = 7.500 statistically can be concluded that workers with elderly age have a 7.500 times greater risk of experiencing work stress, compared to adult workers.

The Relationship Between Room Temperature With Work Stress of Administrative Employees of PG. Purwodadi Magetan

It can be seen that employees who are in a room with an inappropriate temperature as many as 6 people (14.0%) do not experience work stress, and 9 people (21.0%) experience work stress. Meanwhile, employees who are in a room with a suitable temperature as many as 14 people (32.5%) do not experience work stress, and 14 people (32.5%) experience work stress. The Chi Square test results obtained a p value = 0.760 more than α = 0.05, so it can be said that there is no relationship between temperature and work stress.

The results of the risk calculation obtained a value of RP = 0.667 statistically then the room temperature is not a risk factor for work stress in administrative employees of PG. Purwodadi Magetan.

Discussion

Age

According to (Notoatmodjo, 2014), age is the age of an individual starting from the time of birth until repeated years. The more age, the level of maturity and strength of a person will be more mature in thinking and working. The Indonesian Ministry of Health (2003) states that the productive age is 15 to 54 years old. With increasing age, physical or mental abilities will gradually decline. In old age the muscle tissue will shrivel and be replaced by connective tissue. In this case, the elasticity of the muscles decreases along with the lack of ability to work.

The age of the workforce is enough to determine the success in doing a job, both physical and non-physical in nature (Indrianna Meutia et al., 2022) . Younger employees have better hearing and vision abilities, better endurance and are able to move agilely than older employees. In some jobs, the older age factor usually has better understanding and experience. So that age can be a constraint for certain types of work and can cause decreased productivity, experience fatigue and work stress (Zulkifli et al, 2019). Based on research conducted on 43 employees, it can be seen that adult employees are 24 people (55.8%) Meanwhile, elderly employees are 19 people (44.2%).

Employees of PG. Purwodadi is dominated by employees in the adult category, this is because many employees in the elderly category have retired due

to their age limit and also early retirement for health reasons. Elderly category employees who are still actively working are the early elderly category, namely at the age of (46 - 55 years).

Room temperature

Based on research conducted on 43 employees, it can be seen that employees who are in a room with an inappropriate temperature are 15 people (35.0%). Meanwhile, employees who are in a room with a suitable temperature are 28 people (65.0%).

Administrative employees are divided into five sections and spread across four different rooms, the first of which is the general administration section of the AKU consisting of 27 employees with a room area of 90m2. The air temperature measurement results are 25.3 ^{0} C. The room is in accordance with the standard, which is between 23 ^{0} C - 26 $^{(0)}$) C which has been determined by PERMENAKER NO. 05 of 2018 concerning occupational safety and health of the work environment. The room has four air conditioners and the doors and windows are always closed so there is no open air circulation.

The second room is the general administration employee room with an area of 12m ^{2} with 4 employees. The air temperature in the room is 25.4^{0}C which means that the air temperature in the room is in accordance with the standard of 23$^{(0)}$C - 26^{0}C which has been determined by PERMENAKER NO. 05 of 2018 concerning occupational safety and health of the work environment. The room is facilitated by one air conditioner with a door that is always closed and there are no windows and open air circulation.

Furthermore, the third room is the QC Administration section which consists of 14 employees with a room area of 36m^{2}. The results of measuring the air temperature in the room are 29.8 ^{0} C, which means that the air temperature in the room is not in accordance with the standard, namely (<23 $^{(0)}$) C /> 26 $^{(0)}$) C) which has been determined by PERMENAKER NO. 05/2018 concerning occupational safety and health of the work environment. This room has three air conditioners that are on continuously during working hours. However, the air in the room feels hot because the window curtains are open so that the sun's heat can enter the room.

The last room is in the Administration of processing and plants. The room with an area of 16 m^{2} was measured with an air temperature of 27.3^{0}C, which means that the air temperature in the room is not in accordance with the standards (<23^{0}C />26^{0}C) determined by PERMENAKER NO. 05/2018 concerning occupational safety and health of the work environment. There are two air conditioners in this room but only one is still functioning properly. The curtains in this room are also open and get sunlight so that the room feels warmer.

Feeling cool and fresh at work will help speed up the body's recovery from fatigue after work. Thus, to maximize productivity it is important to adjust the temperature so that it is acceptable to each individual (Sudaryo, 2018).

The temperature or temperature in the workspace is something that greatly affects employee comfort (Wardana & Ergantara, 2020). Room temperature that is too hot will result in humans not being able to produce and dissipate body heat in a balanced manner. So that fatigue occurs and reduced concentration and ability to

do work. While in temperature conditions that are too cold (hypothermia) will cause the body to experience lazy movement to reduce body heat wasted to the surrounding environment (Sabilu et al, 2017).

Poor room temperature can affect employee health such as research conducted by (Azteria, 2021) on employees of the X city library as many as 68% of employees find it difficult to focus at work when not using air conditioning *(Air Conditioner*) while 32% others do not find it difficult to work. Regarding health, 60% of respondents experienced itching, shortness of breath to headaches while 40% experienced nervousness and others.

From the data above, there are two rooms that have met the standards according to PERMENAKER NO. 05 of 2018 concerning occupational safety and health of the work environment and there are still two other rooms that have not met the standards. Rooms that have room temperatures that are not up to standard are caused by a lack of maintenance on the *air conditioner* (*Air Conditioner*), and also as a result of opening the window curtains so that the heat of sunlight can cause the room temperature to feel hot.

Work Stress

Based on research conducted on 43 employees, it can be seen that employees who do not experience job stress are 20 people (46.5%), and those who experience stress are 23 people (53.5%). According to (Asih et al., 2018) Job stress is a condition of human interaction with their work in the form of a condition of tension that creates a physical and psychological imbalance, which affects the emotions, thought processes, and conditions of an employee.

Job stress is very bad for the company, because if employees experience job stress, employee work can be hampered and work productivity will decrease (Widhiastuti et al., 2020). The results of this study are in line with research conducted by (Nurini et al., 2017) on employees of PT PLN (Persero) TJBT APP Cirebon, 32 employees experienced work stress while 28 employees did not experience work stress.

The characteristics of job stress experienced by administrative employees of PG. Purwodadi can be seen from the answers to the questions that are most often answered in the frequent and always categories, namely in questions 13, 14 and 18 which indicate that employees feel bored and bored with their work, because all day long they are only at the desk and staring at the monitor screen with the same task every day. Employees feel they have a big responsibility in their work and in developing and advancing the company. In addition, in the development of technology, employees also feel that they always need new competencies for their career development.

At work, employees are very focused on their computers, and there is a lack of interaction between employees. During break times, employees choose to remain seated at their desks and leave the office when performing worship only and there seems to be little communication. Work stress experienced by workers can have a long-term impact with the emergence of various health problems if not properly addressed. In addition to having an impact on workers' health, work stress experienced by employees can also have an impact on the company itself.

The Relationship Between Age and Job Stress

Age is one of the factors that can cause a worker to experience stress due to work, namely the older the age of workers can cause a low possibility to experience work stress because workers with old age will have maturity condition health mental (Aprianti & Surono, 2018).

Workers with older ages will have experience that workers with relatively younger ages do not have. This experience should be especially useful in dealing with stressors that occur in the work environment. Age affects physical muscle work physiologically; the older a person is, the faster they experience fatigue or health problems (Mualim & Adeko, 2020).

Supported by research (Yulia et al,2022) on employees of PT Prima Karya Manunggal states that there is a relationship between age and work stress, namely (77.5%) employees with age <40 (young) experience work stress and at age> 40 (Old) amounting to (95.0%) experience work stress with *p value* = 0.024 these results state that employees with young and old work stress levels are almost significant. In addition, research (Nurini et al., 2017) age ≥ 35 years who experienced mild work stress as much as (38.3%) and severe stress as much as (1.7%), while age < 35 years who experienced mild work stress as much as (8.3%) and severe stress as much as (8.3%). The results of the *Fisher's Exact Test* obtained a *p-value* of 0.000 < α 0.05 so it can be concluded that there is no relationship between age and work stress.

The results of research on the relationship between age and work stress in administrative employees of PG. Purwodadi in 2024 can be seen from respondents with the age of elderly (46-60 years) who experienced stress as many as 15 people (34.2%), while elderly (46-60 years) who did not experience work stress amounted to 4 respondents (10.0%). In the adult age category, there were 24 respondents with adult age (26-45 years) who did not experience work stress, namely 16 respondents (37.8%) and adult age (26-45 years) who experienced work stress as many as 8 respondents (18.0%). The results of the *chi-square* test p value = 0.008 where p <0.05 The results of the risk calculation obtained RP= 7.500 statistically which means that there is a relationship between age and work stress and in the elderly category has a 7.500 times greater risk of experiencing work stress.

Employees of PG. Purwodadi elderly category as many as 15 people (34.2%) experienced work stress as a result of employee reduction so that excessive workload and tasks must also be accepted by employees with age >46 years. Employees with older age tend to have less optimal health conditions than younger employees. While as many as 4 people (10.0%) did not experience work stress, this was because employees had the ability to manage work stress well and had the ability to handle their work.

Employees of PG. Purwodadi with an adult category as many as 16 people (37.8%) did not experience work stress because at an adult age the lower the likelihood of suffering from work stress. Workers with younger ages tend to have better health conditions than workers with older ages. In this study there were 8 employees (18.0%) who experienced work stress, this could be due to the work and tasks carried out by respondents more so that respondents tended to experience work stress.

The Relationship Between Air Temperature and Work Stress

Good room temperature increases productivity and reduces stress levels in employees which is important in building a pleasant work environment but at room temperatures that do not meet the standards can worsen employee performance and can also cause work stress (Sofyan, 2019).

Supported by research conducted by (Wikurendra & Charolina, 2020) on Assembling Division Workers at PT Bromo Steel Indonesia, Pasuruan City, East Java with the result that there is an effect of temperature on work stress with a significance value of 0.047, employees feel uncomfortable with the temperature in their workspace because of the hot air temperature caused by engine energy used during the work process.

However, it is not in accordance with research conducted by (Lady et al., 2017) conducted on Cilegon City BPD employees, the resulting p value is 0.821 (*p* value> 0.05) so that H0 is accepted, which means there is no relationship between temperature and work stress. There are six rooms that are not in accordance with the standards set by the government so that employees feel uncomfortable with the temperature in their room and there is one room where employees already feel comfortable.

Room temperature that does not match the standard can cause employees to feel uncomfortable with their work environment, and can also affect their focus and work productivity. The results of the study stated that in a room with an inappropriate temperature more employees who experience work stress as many as 9 people (21.0%) while the room with the temperature is appropriate the number of employees who experience work stress and who do not experience work stress is the same as many as 14 people (32.5%), the results of bivariate tests show that there is no relationship but room temperature can be one of the risk factors for employees experiencing work stress in PG employees. Purwodadi Magetan.

Research Limitations

This study has limitations that may affect research results such as information bias, namely in collecting questionnaire data, the results obtained depend on the honesty of respondents in answering questions from the questionnaire. To control this, direct observation of employee behavior and conducting interviews to obtain more in-depth information can be done.

CONCLUSION

Based on the research shows that most of the administrative workers of PG Purwodadi Magetan experience high work stress. There is a correlation between age and stress, where older employees tend to experience higher stress, although the room temperature is appropriate, the factor has no significant effect on stress. PG Purwodadi management is advised to hold regular health training every two weeks, weekly gymnastics, and annual outbound to reduce work stress. In addition, air conditioning should be kept at a comfortable temperature of 23°C-26°C. In addition, STIKES BHM Madiun is advised to add literature references about work

stress. To get a better picture, further research should look at other factors such as non-physical environmental factors.

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