

**THE RELATIONSHIP OF AGE AND WEIGHT FOR GLUCOSE LEVEL IN THE VULCANO DISASTER ZONA IN SLEMAN DISTRICT****Nugroho Susanto**

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ABSTRACT

Body weight is factors related glucose level through increasing body weight. Diabetic disease addressed in high glucose blood through lifestyle role, hormones, physical activity. increasing of glucose associated with increased insulin dependent. Glucose level develop for diabetic complication through death. Study aims to know related age and body weight to glucose level in volcano area impacted. Study design with cross-sectional, were 112 sample required. Data age of subject, body weight and glucose were collected from January 2023th until June 2023th. Data of age were collected with medical record. Data weight were collected with “Xiaomi Mi Smart Scale” through medical record registered. Data glucose were collected with “Easy Touch GCU” based in medical record. Statistic data were analysed using descriptive with table of each variable. Data were analysed with chi-square test. Variable of age was no significant relationship between age and blood sugar levels, $p = 0.126$. The body weight was no significant relationship between body weight and blood sugar levels, $p = 0.858$. The factor of age and body weight no significant correlation with glucose level in volcano disaster are of Sleman District. Factor related glucose level maybe caused other factors such food consumption, physical activities.

Keywords: body weight; glucose; volcano

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INTRODUCTION

The (WHO Global Report, 2016) was estimated adults were living diabetes 422 million in 2014. Case of diabetes increases in developing countries. Diabetes patients with high mortality and complication other diseases. Diabetic disease addressed in high glucose blood through lifestyle role. The role of lifestyle have increased prevalence of diabetes mellitus (DM) worldwide (Nauck and Müller, 2023). Factors of internal subject such as hormonal role important of diabetic. The Study (Nauck and Müller, 2023) conclude that hormones play an important role pathophysiology diabetic.

Study (Huang *et al.*, 2023) show blood pressure and glucose related mortality 38.7% (95% confidence interval (CI)=34.1, 43.2. Previous study shown that age and body weigh related of glucose through disease. Study (Nauck and Müller, 2023) that body composition related change in blood glucose levels $P = 0.010$. Study (Inada and Inada, 2022) study in rodent shown that foods can have a significant impact on body weight and glucose metabolism. The preventive of glucose decreasing such as physical activity through decreasing body weight. Study (Luo *et al.*, 2023) shown that aerobic exercise decreased blood glucose levels through

weight loss. Study (Apriliansyah. D, Susanto.N, Yuningrum.H, 2023) show that activity significant decrease body weight through that based on predicting analysis shown that physical activity 209 minute every day during week predict could weight loss of 1 kg. Study (Li *et al.*, 2022) that Exercise intervention improves the blood glucose level. The effect of exercise on fasting blood P < 0:00001. Study (Wang *et al.*, 2022) shown fasting glucose associated with increased insulin secretion in neonates.

Study (Lai *et al.*, 2023) conclusion that glucose control very important to monitoring of glucose level. Study (Zhao *et al.*, 2023) show that We found that every 1 mmol/L increase in fasting plasma glucose (FPG) ($\beta = 100.22$ g, 95% confidence interval (95%CI). Study (Kondo, Kropik and Wong, 2022) shown that glucose caused multifactorial related gestation diabetic. Study (Tzeng, Liu and Chiang, 2022) that to improve glucose and lipid homeostasis in diabetic rodents through the anti-diabetic effects of chitosan and its derivatives. Study (Ma, Sun and Mu, 2023) diets in reducing body weight, BMI, body fat, glucose control, and lipid metabolism. Study (Tsitsou *et al.*, 2022) that an effective nutritional approach for weight loss and insulin sensitivity in individuals with overweight/obesity. Study preventive of glucose related medical plants used. Study (Torres-Vanda and Gutiérrez-Aguilar, 2023) that plants used to treat function of pancreatic β cells and glucose tolerance, as well as regulating body weight. Implement to glucose control related body weight control. Study aims to know related age and body weight to glucose level in volcano area impacted.

METHOD

Study design with cross-sectional was carried out at the Public Health Center (PHC) in Cangkringan, Sleman District. There were 112 sample required through the medical record. Data age of subject, body weight and glucose were collected from January 2023th until June 2023th. The date of subject was investigated by accessing their clinical reports from the medical record as the primary clinical diagnosis. Subject were selected by the inclusion and exclusion criteria from the completed medical record. The data of age, body weight and glucose were obtained from the medical record. Glucose levels were collected from the doctor's diagnosis in the medical record. Data containing patient diagnoses and diabetes control were compiled into excel and analysed using statistical analysis software for frequency and distribution. The variables of age were divided into two categories, under 70 years old and high 70 years old. The variables of body weight were divided into two categories, > 60 kg and $\leq$ 60 kg. Statistic data were analysed using descriptive with table of each variable. Data were analysed with chi-square test.

RESULTS

Study addressed 112 sample in area impacted of volcano disaster in Cangkringan sub district, Sleman District. Based on variable of age, body weight and glucose shown table 1 bellow.

Tabel 1.

Distribusi frequency variable of study based of age, body weight and glucose in Cangkringan sub district

Variable	n	Mean $\pm$ SD
Age	112	65,88 $\pm$ 11.05
Body Weight	112	52.83 $\pm$ 10.80
Glucose	112	124 $\pm$ 60.09

Table 1 shows that the average age in the Sleman volcano area is 65.88 $\pm$ 11.05 years, based on the body weight variable, the average body weight is 52.83 $\pm$ 10.80 kilograms. Based on the blood glucose variable, the average is 124 $\pm$ 60.09 mgdl. Based on the results of bivariate

analysis, the relationship between age, body weight and blood sugar levels can be seen in table 2 below.

Tabel 2.
Relationship Between Age, Body Weight and Glucose Level in Volcano Area Disaster in Sub District Cangkringan

Variable	District Cengkeringan						OR 95% CI	p
	Glucose							
	>120 mmHg		<120 mmHg		Total			
	f	%	f	%	f	%		
Age								
>= 70 years	14	12.5	26	23.3	40	35.7	1,07 (0.47-2.43)	0,126
< 70 years	24	21.4	48	42.9	72	64.3		
Body Weight								
>= 60 Kg	5	4,5	19	17,0	24	21.4	0,43 (0,15-1.28)	0,858
< 60 Kg	33	29.5	55	49.1	88	78.6		

Table 2 shows that the proportion of blood sugar levels above > 120 mm Hg and < 120 mm Hg. Most of them are 70 years old. Based on the results of statistical tests, it was found that there was no significant relationship between age and blood sugar levels, $p = 0.126$. Based on the weight variable, it was found that the proportion of blood sugar levels above > 120 mgdl and < 120 mgdl, the majority had a body weight < 60 kg. Based on the results of statistical tests, it was found that there was no significant relationship between body weight and blood sugar levels, $p = 0.858$.

DISCUSSION

Study shown that average of age $65,88 \pm 11.05$ years, body weight 52.83 ± 10.80 kg, and glucose 124 ± 60.09 mgdl. Previous study (Nauck and Müller, 2023) show that average of age 51 ± 8.2 . Study was shown that no related significant between age, body weight with glucose $p > 0,05$. Compare study (Nauck and Müller, 2023) that correlation body composition and blood glucose levels $r = 0.498$, $P = 0.010$. Study related of changes in lifestyle and glucose control. Glucose level improved with physical activities such walk, fitness. Study (Luo *et al.*, 2023) shown that aerobic exercise decreased blood glucose levels through weight loss than decrease obesity control. Study (Li *et al.*, 2022) that Exercise intervention improves the blood glucose level $P < 0:00001$ such as walking.

Previous study same in disaster (Uemura *et al.*, 2022) shown that age ≥ 65 years significant before and after disaster OR = 1.07 (95% CI: 0.94–1.22). the study (Budiastutik *et al.*, 2022) shown that age significant related pre diabetic ($r = 0.146$; $p = 0.022$). The study compared differences results caused the previous study related the tsunami disaster compare this study related volcanoes disaster. Study (Sseguya *et al.*, 2023) shown that subject have been diabetic duration 6.6 ± 5 years. It is situation caused the disaster conditions can change daily habitual behavior. The disaster conditions a long time caused health problems in community.

Based on body weight show that weight 52.83 ± 10.80 kg. Previous study (Budiastutik *et al.*, 2022) shown that BMI related significant to pre diabetic ($r = 0.130$; $p = 0.041$). Study shown that high diabetic prevalence among urban people compare rural. Study (Uemura *et al.*, 2022) shown that abdominal obesity related not only lifestyle habits but change of food consumption. (Wu *et al.*, 2023) study review shown that the preventive of prediabetic was developed of instrument for detection multiple indicator such as metabolic disorder through related system dysfunction. The abnormal metabolites one of caused pre diabetic such as obese.

Study (Huang *et al.*, 2023) show intervention strategy is required for blood pressure and blood glucose in China and US to prevent obesity. Study (Tzeng, Liu and Chiang, 2022) that glucose level reduced with anti-diabetic effects of chitosan and its derivatives. Study (Ma, Sun and Mu, 2023) that diets reducing body weight, BMI, body fat, glucose control, and lipid metabolism. Study (Tsitsou *et al.*, 2022) that effective nutritional approach for weight loss, and glucose control and insulin sensitivity. Study (Torres-Vanda and Gutiérrez-Aguilar, 2023) that food consumption factors related glucose level such saponins, phenolic compounds, antioxidants, tannins, triterpenes. Study (Susanto, 2020a) body weight related cholesterol level through high mortality for elderly. Based an-epidemiology approach that food consumption is agent of diabetic through body weight or obese (Susanto, 2020b). Study (Izhar, 2020) concluded that junk food consumption higher impacted for body weight.

Previous Study (Uemura *et al.*, 2022) during disaster earthquake in Japan show that abdominal obesity before and after disaster significant $P < 0.001$. The abdominal obesity was significant associated snack after dinner and alcohol drinking before and after disaster $p = < 0.01$. The study was concluded that increasing abdominal obesity affected disaster. Factors of physiological main factor related disaster. The disaster has been impacted of social and physiological of population around disaster. Study in health condition such as pregnancy (Yu *et al.*, 2022) shown that physiological factors significant related metabolism during pregnancy in disaster.

The study was show that age, body weight no related of glucose level. It is condition caused that in rural areas such around volcano disaster not change of lifestyle in daily activities. Previous study (Pergolizzi *et al.*, 2023) The period of pandemic Covid-19 has been changed lifestyle through increasing of developing diabetes, study show that estimate 40% risk for diabetes developing. The during pandemic Covid-19 community stay at home related increase glucose level and diabetic ketoacidosis. The population are diagnosed soon after pandemic Covid-19. It is situation increasing incidence of diabetic in population. Study (Sseguya *et al.*, 2023) shown that during pandemic Covid-19 reduced frequency the clinic visits, access to food, diabetic support. It is condition was increasing of pre diabetic condition. Study (Khunti, Valabhji and Misra, 2023) shown that low glycaemic control caused diabetic developed through complication. It is important for patient to control of glycaemic.

The glucose control repaired food regulating such as food diet. Study (Inada and Inada, 2022) shown that food regulation improved significant impact on body weight and glucose metabolism. Study (Wang *et al.*, 2022) metabolic risk factors independently associated with increased insulin secretion in neonates. Study (Lai *et al.*, 2023) conclusion blood glucose monitoring method can achieve glucose control. Study (Kondo, Kropik and Wong, 2022) shown that factor pregnancy related glucose level through diabetic. Study (Susanto and Rusyani, 2022) conclude that The factor contributing to diabetes referrals are insulin dependence and complications. The main factor contributing to diabetes referral is diabetes complications. Diabetes complications are a very serious problem related diabetic deaths.

CONCLUSION

The factor of age and body weight no significant correlation with glucose level in volcano disaster are of Sleman District. Factor related glucose level maybe caused other factors such food consumption, physical activities.

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