Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

ANALYSIS OF DEMOGRAPHIC AND SOCIOECONOMIC FACTORS ON THE INCIDENCE OF DIABETES MELLITUS IN DKI JAKARTA USING LOGISTIC REGRESSION

M. Ilham Fahlevi[1a*], Jackson Imanuel Manurung[2b], Mohd Rizky Putra Pratama[3c], M. Naufal Hisyam Ayandra[4d], Allsela Meiriza[5e], Ken Ditha Tania[6f], Zaqqi Yamani A[7g]

[1234567] SriwijayaUniversity

[*a]E-mail: fahleviilham06@gmail.com,
[b]E-mail: jackson.imanuelmanurung@gmail.com,
[c]E-mail: mohdrizkypp@gmail.com,
[d]E-mail: mnauvalhisyam@gmail.com,
[e]E-mail: allsela_meiriza@yahoo.co.id,
[f]E-mail: kenya.tania@gmail.com,
[g]E-mail: zaqqi_yamani@unsri.ac.id

(*) Corresponding Author
fahleviilham06@gmail.com,

ARTICLE HISTORY
Received : 20-01-2026
Revised : 07-02-2026
Accepted : 28-03-2026

KEYWORDS
Diabetes Mellitus;
Logistic Regression;
Demographic Factors;
Socioeconomic Status;
DKI Jakarta;
Comorbidity;

ABSTRACT
Diabetes mellitus (DM) is a non-communicable disease with a significant global impact and an increasing incidence rate. Indonesia records one of the highest diabetes rates, particularly in the province of DKI Jakarta, which shows the highest national prevalence. This observational study with a cross-sectional design aims to evaluate the factors influencing the onset of DM in the Jakarta area using data from the 2023 Indonesia National Health Survey (SKI). This research involves participants over the age of 15. Analysis was conducted using univariate, bivariate (chi-square test), and multivariate methods with the Logistic Regression method, while considering the complexity of the research design. Research findings indicate that age, education level, and comorbidities are factors that significantly influence the incidence of DM. Those below the productive age group are at a higher risk of experiencing DM (OR = 2.268). Secondary education lowers the risk compared to higher education (OR = 0.611). Comorbidity is the main risk factor, increasing the probability of DM incidence by 6.229 times. These findings emphasize the importance of managing comorbidities and implementing appropriate preventive measures for at-risk individuals in efforts to manage diabetes in major cities.

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

INTRODUCTION

Global health development targets within the framework of the Sustainable Development Goals (SDGs) established by the United Nations place non-communicable diseases as a top priority (Fidelia et al., 2025). SDG 3 Target 3.4 aims for a one-third reduction in premature mortality from non-communicable diseases by 2030, measured through Indicator 3.4.1. Diabetes mellitus (DM) is a major contributor to premature death alongside cardiovascular disease, cancer, and chronic respiratory diseases (WHO, 2023). High morbidity rates and chronic complications resulting from DM indicate that achieving this target still faces significant challenges (Rosyada & Trihandini, 2013).

Global data shows a highly significant increase in cases over the last two decades. The International Diabetes Federation reported that as many as 537 million adults (20–79 years) were living with diabetes in 2021 and is projected to increase to 643 million by 2030 and 783 million by 2045 (International Diabetes Federation, 2021). Recent reports even show that global figures reached approximately 589 million adults in 2024, equivalent to 1 in 9 adults (International Diabetes Federation, 2025). Diabetes also causes approximately 3.4 million deaths per year directly or indirectly (International Diabetes Federation, 2025). The World Health Organization emphasizes that the global prevalence of diabetes has increased nearly fourfold since 1980, particularly in middle-income countries (WHO, 2023).

The Southeast Asian region is experiencing the fastest growth in cases compared to several other regions. Rapid urbanization, changes in consumption patterns high in sugar and fat, as well as low physical activity, accelerate the epidemiological transition toward the dominance of metabolic diseases. Indonesia is among the top ten countries with the highest number of people living with diabetes in the world, with an estimated more than 19 million adult residents living with diabetes (International Diabetes Federation, 2024).

The 2023 Indonesia Health Survey (SKI) shows a significant increase in prevalence. Diabetes prevalence based on blood sugar tests in the population aged ≥15 years reached 1.7%, increasing compared to the 2018 Riskesdas at 1.5% (Kemenkes RI, n.d.). This condition indicates that the achievement of non-communicable disease control targets is still far from optimal or even moving away from the target for reducing diabetes mellitus in Indonesia.

Regional disparities demonstrate the urgency for more specific analysis. DKI Jakarta Province is recorded as the region with the highest diabetes prevalence in Indonesia based on health professional diagnosis, at 3.9% in the population aged ≥15 years, and 3.1% across all age groups (Kemenkes RI, n.d.). As a metropolitan area with a population density of more than 16,000 people per km² and the highest urbanization rate in Indonesia, Jakarta has complex risk factor characteristics such as sedentary lifestyles, ultra-processed food consumption, and urban stress.

Research by Siskarossa Ika Oktora and Daniel Butar Butar (2022) using data from 34 provinces in 2018 found that sociodemographics and hypertension significantly influence the prevalence of diabetes mellitus in Indonesia (Oktora & Butar, 2022). Meanwhile, in Bandung Regency, it was shown that genetic factors, age, and hypertension are related to the incidence of diabetes mellitus, with genetic factors being the dominant determinant (Muhammadong et al., 2024). However, most studies are still based on 2018 Riskesdas data or limited areas, so this study possesses novelty through the use of the latest 2023 Indonesia Health Survey (SKI) data with a specific focus on DKI Jakarta Province.

These gaps indicate the need for a determinant analysis of diabetes mellitus that is more focused on DKI Jakarta Province using a latest data-based approach. The results of the study are expected to provide a strong empirical basis for preventive interventions and health policies that are more precisely targeted in supporting the achievement of SDG 3.4.

METHOD

This study is observational using a cross-sectional design with a quantitative approach. The data used originates from the 2023 Indonesia Health Survey (SKI), a national survey covering all provinces in Indonesia. The cross-sectional design was chosen because it allows for the measurement of DM prevalence and related risk factors within a single data collection period (Syukriani et al., 2022).

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

The primary data source is the 2023 SKI database managed by the Ministry of Health of the Republic of Indonesia. The 2023 SKI used a multistage stratified cluster random sampling method to represent the national population (38 provinces). In this study, the target population is all residents of DKI Jakarta Province aged ≥15 years who were respondents in the 2023 SKI. The analysis sample includes all respondents who met the inclusion criteria (age ≥15 years and residing in DKI Jakarta) and had complete data for the variables analyzed. Because SKI is a complex survey, data analysis accounts for sampling weight, strata, and clusters according to the survey design.

Variables in this study consist of: Dependent variable: Incidence of Diabetes Mellitus (DM). DM is determined based on the 2023 SKI operational definition, namely the respondent's admission of having been diagnosed with DM by a health professional or the results of a fasting blood sugar test ≥126 mg/dL or 2-hour post-load ≥200 mg/dL. Independent variables: Demographic and socio-economic factors, including age (categorized, e.g., <30, 30–44, 45–59, ≥60 years), gender (male/female), education level (low/middle/high), employment status (employed/unemployed), place of residence (urban/rural), economic status (poor/middle/wealthy), and comorbidities (e.g., hypertension, heart disease, etc.).

The researcher only used anonymous secondary data from the 2023 SKI after obtaining official permission. This survey covers a large sample (tens of millions of residents), making it suitable for analyzing prevalence and the relationship between variables at the population level.

Analysis was performed using statistical software (e.g., IBM SPSS v.25). Because the 2023 SKI is a complex survey, the data was configured using survey design (setting primary sampling units, strata, and sampling weights) so that estimates reflect the population (Sagita Maharani et al., 2025).

The analysis was carried out in stages: Univariate analysis was conducted to describe characteristics through frequency distributions and percentages of each research variable, such as the proportion of diabetes mellitus (DM), age, and gender. This analysis was used to provide an initial overview regarding the distribution of research data (Astuti et al., 2024). Bivariate analysis used the chi-square (χ^2) test to determine the relationship between categorical independent variables and the incidence of DM. The chi-square test was used to assess the presence or absence of a relationship between two categorical variables with a statistical significance level of $\alpha = 0.05$ (Cahyaningtyas Dwi Hariani et al., 2025). Furthermore, multivariate analysis was performed using multiple logistic regression to identify dominant factors influencing the incidence of DM. Logistic regression is commonly used in health research to analyze binary dependent variables and produce measures of association in the form of odds ratios (OR) with 95% confidence intervals (Hamza et al., 2021).

The study used 2023 SKI secondary data and therefore did not involve direct interaction with respondents. Access to microdata was obtained with official permission from the Ministry of Health of the Republic of Indonesia, and the research protocol received institutional ethical approval according to national guidelines. All data were analyzed anonymously; data confidentiality and security were strictly maintained (encrypted data, no respondent identities displayed). SKI participants originally provided informed consent during the field survey, and this study continues to adhere to the principles of health research ethics.

RESULTS AND DISCUSSION

Table 1. Univariate Test Results

Variabel	Jumlah	Proporsi
Umur		
Non produktif	3568	14.3%
Produktif	21412	85.7%
Jenis kelamin		
Perempuan	12470	49.9%
Laki-laki	12510	50.1%
Pendidikan		
Rendah	3480	13.9%

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

Variabel	Jumlah	Proporsi
Menengah	17600	70.5%
Tinggi	3900	15.6%
Pekerjaan		
Bekerja	14607	58.5%
Tidak bekerja	10374	41.5%
Tempat Tinggal		
Perkotaan	24908	99.7%
Pedesaan	72	0.3%
Status ekonomi		
Terkaya	13282	53.2%
Kaya	7176	28.7%
Menengah	3191	12.8%
Miskin	1188	4.8%
Termiskin	143	0.6%
Komorbid		
Ada komorbid	3882	15.5%
Tidak ada	21099	84.5%

Based on the univariate analysis of respondents in DKI Jakarta Province using the 2023 Indonesia Health Survey (SKI) data, detailed demographic and socio-economic characteristics were identified. The majority of respondents are in the productive age group of 15–64 years at 85.7%, showing a dominance of an active population exposed to urban environmental pressures. The gender distribution is highly balanced between males (50.1%) and females (49.9%), allowing for a proportional analysis of diabetes risk without gender bias.

In terms of education and employment, most respondents have secondary education (70.5%) and are actively employed (58.5%), reflecting the character of an urban society with high mobility and potential for sedentary lifestyles. Respondents living in urban areas reached 99.7%, emphasizing the strong determination of the city environment on the incidence of diabetes.

The most prominent findings in the socio-economic dimension show a concentration of respondents in the upper economic group, dominating the total number of respondents at 81.9%, consisting of the "Rich" quintile at 28.7% and the "Richest" at 53.2%, indicating that diabetes tends to occur in individuals with middle-to-upper economic status. Additionally, 15.5% of respondents have comorbid conditions, indicating significant health vulnerability before being diagnosed with diabetes mellitus.

Table 2. Bivariate Test Results

Variabel	Diabetes Melitus		P.VALUE	PR
	Ya (%)	Tidak (%)		
Umur				
Non produktif	335(9,4%)	3233(90,6%)	0,000	3.109 (2.349-4.115)
Produktif	648(3%)	19311(97%)	.	Ref
Jenis kelamin				
Perempuan	596(4,8%)	11874(95,2%)	0,001	1.543 (1.198-1.989)
Laki-laki	387(3,1%)	12123(96,9%)	.	Ref
Pendidikan				
Rendah	267(7,7%)	3213(92,3%)	0,024	1.578 (1.059-2.352)
Menengah	526(3%)	17074(97%)	0,004	0.600 (0.468-0.769)

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

Variabel	Diabetes Melitus		P.VALUE	PR
	Ya (%)	Tidak (%)		
Tinggi	190(4,4%)	3710(95,1%)	.	Ref
Pekerjaan				
Bekerja	450(3,1%)	14156(96.9%)	0,000	0.600 (0.468-0.769)
Tidak bekerja	533(5.1%)	9841(94,9%)	.	Ref
Tempat Tinggal				
Perkotaan	981(3,9%)	23927(96,1%)	0,035	1.141 (1.010-1.289)
Pedesaan	2(3,5%)	70(96,5%)	.	Ref
Status ekonomi				
Terkaya	542(4,1%)	12740(95,9%)	0,184	3.098 (0.520-18.461)
Kaya	329(4,6%)	6846(95,4%)	0,138	3.488 (0.582-20.883)
Menengah	81(2,6%)	3109(97,4%)	0,464	1.939 (0.315-11.935)
Miskin	28(2,4%)	1159(97,6%)	0,516	1.838 (0.282-11.989)
Termiskin	1(1,3%)	141(98,7%)	.	Ref
Komorbid				
Ada komorbid	538(13,9%)	3343(86,1%)	0.000	6.584 (5.176-8.375)
Tidak ada	444(2,1%)	20654(97,9%)	.	Ref

Based on the bivariate analysis results table, the Age variable is significantly associated with diabetes mellitus ($p < 0.001$). The prevalence in the non-productive age group is 9.4%, which is higher than the productive age group at 3%. The non-productive group has a 3.1109 times greater risk of suffering from diabetes compared to the productive age group.

The gender variable shows a significant relationship ($p = 0.001$). Females have a diabetes prevalence of 4.8%, higher than males at 3.1%. Females have a 1.543 times greater risk of experiencing diabetes mellitus compared to males.

Education level is significantly associated with the incidence of diabetes. Low education has a prevalence of 7.7% and a 1.578 times greater risk compared to higher education (PR = 1.578; CI: 1.059–2.352; $p = 0.024$). Secondary education actually shows a lower risk compared to higher education (PR = 0.600; CI: 0.468–0.769; $p = 0.004$).

Employment status is significantly associated ($p < 0.001$). Diabetes prevalence in unemployed respondents is 5.1%, higher than those who are employed at 3.1%. Employed respondents have a lower risk (PR = 0.600; CI: 0.468–0.769) compared to those who are unemployed.

Place of residence is significantly associated with diabetes mellitus ($p = 0.035$). Respondents in urban areas have a 1.141 times greater risk compared to respondents in rural areas (PR = 1.141; CI: 1.010–1.289). Conversely, economic status does not show a statistically significant relationship with the incidence of diabetes mellitus because all p-values were found to be > 0.05.

Comorbidity is the most significant variable ($p < 0.001$). Diabetes prevalence in respondents with comorbidities is 13.9%, much higher than those without comorbidities at 2.1%. Respondents with comorbidities have a 6.584 times greater risk of experiencing diabetes mellitus (PR = 6.584; CI: 5.176–8.375).

Table 3. Multivariate Test Results

Variabel	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Umur	2.170 (1.550–3.038)	2.256 (1.613–3.145)	2.225 (1.595–3.104)	2.225 (0.001–0.047)	2.268 (0.018–0.036)*

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

Variabel	Model 1	Model 2	Model 3	Model 4	Final Model
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Non produktif	1.000	1.000	1.000	1.000	1.000
Produktif (ref)					
Jenis kelamin					
Perempuan	1.201 (0.914–	1.277 (0.977–			
Laki-laki	1.578)	1.670)	–	–	–
(ref)	1.000	1.000	1.000	1.000	1.000
Pendidikan	1.078 (0.664–	1.124 (0.697–	1.187 (0.729–	1.187 (0.729–	1.086 (0.697–
Rendah	1.749)	1.812)	1.934)	1.934)	1.694)*
Menengah	0.605 (0.419–	0.625 (0.436–	0.635 (0.442–	0.636 (0.442–	0.611 (0.433–
Tinggi (ref)	0.873)	0.895)	0.913)	0.914)	0.861)*
	1.000	1.000	1.000	1.000	1.000
Pekerjaan					
Bekerja					
Tidak	0.854 (0.642–				
bekerja	1.137)	–	–	–	–
(ref)	1.000	–	–	–	–
Tempat Tinggal					
Perkotaan	0.838 (0.715–	0.835 (0.713–	0.871 (0.748–		
Pedesaan	0.982)	0.978)	1.015)	–	–
(ref)	1.000	1.000	1.000	–	–
Status ekonomi	3.575 (0.543–	3.635 (0.548–	3.727 (0.562–	3.728 (0.562–	
Terkaya	23.530)	24.109)	24.701)	24.706)	
Kaya	4.032 (0.613–	4.065 (0.613–	4.132 (0.624–	4.133 (0.624–	
Menengah	26.530)	26.969)	27.381)	27.387)	
Miskin	2.339 (0.343–	2.347 (0.342–	2.414 (0.352–	2.414 (0.352–	–
Termiskin	15.932)	16.111)	16.558)	16.559)	–
(ref)	2.119 (0.293–	2.115 (0.291–	2.146 (0.296–	2.145 (0.296–	–
	15.344)	15.393)	15.573)	15.572)	–
	1.000	1.000	1.000	1.000	–
Komorbid					
Ada					
komorbid	6.021 (4.599–	6.019 (4.592–	6.165 (4.721–	6.165 (4.721–	6.229 (4.763–
Tidak ada	7.884)	7.888)	8.050)	8.050)	8.148)*
(ref)	1.000	1.000	1.000	1.000	1.000

Based on the analysis results in the final model, the variables of age, education level, and comorbidities are proven to have a significant relationship with the potential for contracting diabetes mellitus in DKI Jakarta Province. Meanwhile, variables such as gender, employment status, place of residence, and economic status do not show a significant relationship after controlling for variables within the model.

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

The age variable shows a significant relationship with the incidence of diabetes mellitus. Respondents in the non-productive age group are 2.268 times more likely to experience diabetes mellitus compared to those in the productive age group.

In the education variable, respondents with secondary education show a lower likelihood of experiencing diabetes mellitus compared to respondents with higher education (OR = 0.611; CI: 0.433–0.861). On the other hand, low education does not show a significant relationship with the incidence of diabetes mellitus in the final model.

The comorbidity variable shows the strongest association with the emergence of diabetes mellitus. Respondents who have comorbid diseases are 6.229 times more likely to experience diabetes mellitus compared to respondents who do not have comorbid issues (OR = 6.229; CI: 4.763–8.148).

The variables of gender, employment status, place of residence, and economic status do not show significant relationships in the final model and, therefore, are not considered primary determinants in the incidence of diabetes mellitus in this study.

Discussion

Multivariate analysis results indicate that respondents in the non-productive age group have a higher risk of experiencing diabetes mellitus compared to the productive age group (OR = 2.268). This finding demonstrates that increasing age is a significant factor contributing to the incidence of diabetes mellitus. Physiologically, the aging process is related to a decline in pancreatic β-cell function, increased insulin resistance, and changes in glucose metabolism that lead to elevated blood glucose levels.

The results of this study are consistent with previous research stating that older age groups are more likely to experience diabetes mellitus compared to younger age groups. Such studies explain that metabolic changes occurring with age increase an individual's susceptibility to metabolic diseases, including diabetes mellitus (Alfaqeeh et al., 2024). However, other research conducted on patients at the Alalak Selatan Health Center showed no significant relationship between age and type 2 diabetes mellitus (p = 0.800). This difference in results is triggered by differences in population characteristics, sample size, and a more limited research scope compared to this study, which utilizes large-scale health survey data (Nuridzin et al., 2024)

Multivariate analysis results also show that respondents with secondary education have a lower risk of experiencing diabetes mellitus compared to respondents with higher education (OR = 0.611). This finding suggests that education level influences the incidence of diabetes mellitus through health behavior mechanisms and access to health information.

Education is one of the social determinants of health that influences an individual's knowledge regarding healthy lifestyles, dietary patterns, and the importance of physical activity as an instrument for preventing non-communicable diseases. An adequate level of education correlates positively with an individual's capacity to access health information and their ability to adopt healthy living behaviors. Previous research associates the incidence of diabetes through its influence on food consumption patterns, physical activity, and health behaviors (Alfaqeeh et al., 2024). Furthermore, research conducted on type 2 diabetes mellitus patients at the Alalak Selatan Health Center shows that lifestyle factors such as diet and physical activity play a crucial role in the incidence of diabetes mellitus, which is also indirectly related to an individual's education level in absorbing health information (Nuridzin et al., 2024).

Multivariate analysis results indicate that respondents with a history of comorbidities have a greater risk of experiencing diabetes mellitus (OR = 6.229) compared to respondents without a history of comorbidities. This finding positions comorbidity as the most dominant risk factor in this study. Comorbidities frequently found in diabetes mellitus patients include hypertension, obesity, and other metabolic diseases related to insulin resistance and glucose metabolism disorders. These conditions can trigger metabolic disorders more rapidly and increase the risk of developing diabetes mellitus.

Previous research identifies a link between hypertension and obesity with the incidence of diabetes mellitus, where both conditions act as risk factors that trigger insulin resistance and glucose metabolism disorders. In addition,

Sosioedukasi
JURNAL ILMIAH ILMU PENDIDIKAN DAN SOSIAL
ISSN: 2086-6135 E-ISSN: 2541-612x
Volume 15 No. 1. Maret 2026 https://ejournal.unibabwi.ac.id/index.php/sosioedukasi/index

the presence of comorbidities is also associated with an increased risk of diabetes mellitus complications such as cardiovascular disease, neuropathy, and nephropathy, which impact the comprehensive increase in disease burden.

The novelty of this research shows that comorbidity is the most dominant determinant of the incidence of diabetes mellitus in the urban population of DKI Jakarta. This result strengthens the argument that the effectiveness of diabetes control in the community heavily depends on the ability to control comorbid diseases, rather than just aspects of individual behavior.

Comprehensively, this study presents novelty by demonstrating that demographic and socio-economic factors such as age and education, as well as health conditions in the form of comorbidities, have different contributions to the incidence of diabetes mellitus in urban populations. Compared to previous studies generally conducted on limited populations or specific health facilities, this study uses large-scale health survey data, thereby providing a more comprehensive and representative overview of the determinants of diabetes mellitus in DKI Jakarta province.

Study Limitations

This study has several limitations that should be considered when interpreting the results. First, the cross-sectional study design limits the ability to determine causal relationships between risk factors and the incidence of diabetes mellitus. Second, the use of large-scale health survey data allows for the possibility of information bias, particularly in variables that are self-reported, such as medical history and health behaviors. Third, the variables used in the analysis may not fully capture all potential determinants of diabetes mellitus, such as genetic factors, detailed dietary patterns, and more specific levels of physical activity. In addition, the possibility of unmeasured differences in respondent characteristics (unmeasured confounding) may also influence the analysis results. Therefore, further research using longitudinal designs and more comprehensive variable measurements is needed to strengthen these findings.

CONCLUSION

This study reveals that the prevalence of diabetes mellitus in DKI Jakarta Province is influenced by several demographic factors as well as the health conditions of the respondents. Bivariate analysis shows that age, gender, education, employment status, place of residence, and comorbidities have a significant relationship with diabetes mellitus, while economic status does not demonstrate a statistically significant association. Multivariate analysis indicates that age, education, and comorbidities are significant determinants of diabetes mellitus after controlling for other variables in the model. Individuals in the non-productive age group have a higher probability of experiencing diabetes mellitus compared to those in the productive age group. In addition, individuals with secondary education have a lower risk compared to those with higher education. Comorbidity emerges as the most dominant factor in this study. Respondents with comorbid conditions are more than six times more likely to suffer from diabetes mellitus compared to those without comorbidities. These findings suggest that the presence of accompanying diseases plays a crucial role in increasing the likelihood of diabetes mellitus. In the context of DKI Jakarta, diabetes prevention efforts should be prioritized toward high-risk groups, particularly individuals with sedentary lifestyles and existing health conditions. Strengthening health promotion strategies and improving public education on healthy lifestyles such as maintaining a balanced diet, increasing physical activity, and undergoing regular health check-ups for early detection are essential. Furthermore, enhancing programs for the prevention and control of non-communicable diseases, especially in managing comorbid conditions such as hypertension and other metabolic disorders, is critical to reducing the risk of diabetes mellitus. This study has several limitations that should be explicitly acknowledged. First, the cross-sectional design restricts the ability to establish causal relationships between identified risk factors and diabetes mellitus. Second, the use of large-scale survey data introduces the potential for information bias, particularly from self-reported variables such as disease history and health behaviors. Third, the analysis may not fully capture all relevant determinants, including genetic predisposition, detailed dietary intake, and precise measurements of physical activity. Additionally, unmeasured confounding variables may influence the observed associations. Therefore, future

studies employing longitudinal designs and more comprehensive variable measurements are recommended to validate and strengthen these findings.

REFERENCES

Alfaqeeh, M., Alfian, S. D., & Abdulah, R. (2024). Factors associated with diabetes mellitus among adults: Findings from the Indonesian Family Life Survey-5. *Endocrine and Metabolic Science*, *14*. https://doi.org/10.1016/j.endmts.2024.100161

Cahyaningtyas Dwi Hariani, E., Sakdiyah, S., & Ditya Erliana, U. (2025). A Cross-Sectional Study of the Correlation between Nutritional Status and Length of Hospital Stay among Pediatric Patients at The Srikandi Ward of Jombang General Hospital. *Indonesian Journal of Human Nutrition*, *12*(1), 81–89. https://doi.org/10.21776/ub.ijhn.2025.012.01.8

Fidelia, V. N., Julyana, R., Hambali Priyanto, C., Merry, T., Vica, M., Lumbanraja, J. B., Septi, F., Widiyan, P., Budiman, D. P., Priambodo, B., Pembangunan, U., Veteran, N. ", & Timur, J. (2025). *Edukasi dan Deteksi Dini Penyakit Tidak Menular dalam Implementasi SDG 3 di Kelurahan Ampel*. *5*(3), 89–97. https://jurnal.permapendis-sumut.org/index.php/pema

Hamza, M. S., Badary, O. A., & Elmazar, M. M. (2021). Cross-Sectional Study on Awareness and Knowledge of COVID-19 Among Senior pharmacy Students. *Journal of Community Health*, *46*(1), 139–146. https://doi.org/10.1007/s10900-020-00859-z

International Diabetes Federation. (2025). *IDF Diabetes Atlas*.

Kemenkes RI. (n.d.). *Profil Kesehatan Indonesia 2023*. Kementerian Kesehatan Republik Indonesia.

Muhammadong, J., Yuyun, W., Muriman, L., Azis, W., & Subhan, M. (2024). Analysis of Associated Factors Contributing to Type 2 Diabetes Mellitus in the Coastal Community of Bahari Village, Southeast Sulawesi, Indonesia: A Cross-Sectional Study. Open Public Health Journal, 17, e18749445299633. http://dx.doi.org/10.2174/0118749445299633240327062651

Nuridzin, D. Z., Aghram, N., Mawarni, A., & Retnowati, R. (2024). Determinants of Diabetes Mellitus Prevalence in Indonesia: A Multiple Linear Regression Model in an Ecological Analysis of Adults Aged 15 Years and Older. Jurnal Manajemen Kesehatan Indonesia, 12(3), 327–338. https://doi.org/10.14710/jmki.12.3.2024.327-338

Oktora, S. I., & Butar, D. B. (2022). Determinants of Diabetes Mellitus Prevalence in Indonesia. *Kemas*, *18*(2), 266–273. https://doi.org/10.15294/kemas.v18i2.31880

Rosyada, A., & Trihandini, I. (2013). Determinan Komplikasi Kronik Diabetes Melitus pada Lanjut Usia. *Kesmas: National Public Health Journal*, *7*(9), 395. https://doi.org/10.21109/kesmas.v7i9.11

Sagita Maharani, A., Asri, Y., Fani, atul, Studi Sarjana Keperawatan, P., Ilmu Kesehatan, F., & Teknologi Sains dan Kesehatan dr Soepraoen, I. R. (2025). Hubungan Diabetes Mellitus dengan Penyakit Ginjal Kronis pada Lansia di Indonesia: Analisis Data Survei Kesehatan Indonesia (SKI) 2023. *Borobudur Nursing Review*, *05*(02), 169–179. https://doi.org/10.31603/bnur.15592

Syukriani, Y., Noviandhari, A., Arisanti, N., Setiawati, E. P., Rusmil, V. K., Dhamayanti, M., & Sekarwana, N. (2022). Cross-sectional survey of underreported violence experienced by adolescents: a study from Indonesia. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-021-12427-8

WHO. (2023). *World Health Statistics*.