

# Relationship between Knowledge and Behavior Prevention of Diabetes Mellitus Type II with Diabetes Mellitus Incident in Cilembu Village

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## ABSTRACT

Diabetes mellitus is one of disease chronic whose prevalence Keep going increase globally , including in Indonesia. The level of knowledge and behavior prevention considered play a role important in control incidence of diabetes mellitus . Research This aiming For analyze connection between level knowledge about diabetes mellitus and behavior prevention with the incidence of diabetes mellitus in Cilembu Village Subdistrict Recovery Regency Sumedang 2024. Research This use cross- sectional design with 78 selected respondents in a way random . Data collected through questionnaire that includes knowledge about diabetes mellitus and behavior prevention . Data analysis was performed using the chi-square test to determine connection between variables . The results of the chi-square test show existence significant relationship between level knowledge about diabetes mellitus and the incidence of diabetes mellitus (p-value 0.000). Respondents with more knowledge Good tend own higher incidence of diabetes mellitus low . On the contrary , no found connection significant between behavior prevention and incidence of diabetes mellitus (p-value 0.297).



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## 1. INTRODUCTION

A series disease known metabolic as diabetes mellitus (DM) is defined as hyperglycemia caused by deficiency insulin secretion , insulin action , or both . DM can broken down become a number of categories , including type I DM , type II DM , gestational DM and type II DM another . One of the most common type , counting more from 90% to 95% of cases , are type II DM (WHO, 2021). According to Association Indonesian Endocrinology (PERKENI, 2021) diabetes mellitus type II is problem disease metabolism caused by a lack of insulin secretion , insulin action , or both of them when combined with hyperglycemia . Increased blood sugar levels consequence disturbance insulin activity ( insulin resistance ) or decline insulin secretion by pancreatic beta cells characterize diabetes mellitus type II, a condition metabolic . Diabetes mellitus sufferers type II often complain about symptom like tingling , polydipsia ( increased thirst ) , polyuria ( increased thirst ) , polyphagia ( increased hunger ) , and decreased weight .

Diabetes mellitus (DM) has influence enough negative big to quality life patient and is reason main morbidity and mortality . The World Health Organization reported in 2018 that DM is a reason death number

six globally . An estimated 4.2 million adults aged 20 to 79 years , or 11.3% of all deaths in 2019 , will die due to Diabetes; 1.9 million of them is those under 60 years of age . According to data from the World Health Organization (WHO), there are 422 million people worldwide who suffer from diabetes mellitus , increasing about 8.5% of adult population , and an estimated 2.2 million people will die consequence disease the before 70 years old . In fact , it is estimated will increase by another 600 million people by 2035. According to the American Diabetes Association (ADA) , approx half from all adults in America have diabetes mellitus , and someone diagnosed suffer from it every 21 seconds (ADA, 2019).

With prevalence of diabetes mellitus type II of 11.3% and the prevalence of diabetes of 19.9% or 111.2 million people aged 65 to 79 years , Indonesia ranks order third in Southeast Asia. Incident This estimated will increase along increase amount population humans . In West Java Province the prevalence of diabetes mellitus by 4.2%, and the prevalence prediabetes by 7.8% ( Ministry of Health of the Republic of Indonesia, 2019). In the city of Bandung, the prevalence of diabetes mellitus Lastly in 2020 there were 43,906 patients , and 50,646 ( or 115.4 % ) had get maintenance medical in accordance with diabetes mellitus requirements .

Cases of diabetes mellitus include : happened in the Regency Sumedang with 2,065 cases happened in the District Recovery ( Health Office) Sumedang , 2021). From the results notes medical in one of the Health Centers in the District Area Recovery There were 183 cases of diabetes mellitus . Knowledge is very important factor in action Diabetes Mellitus sufferers , behavior based on knowledge will more easy For implemented . Knowledge close the relationship with behavior , because with knowledge patient own reason or runway For Making Decisions (Dewi, 2019). The Gap lack of knowledge noticed among the living people with Diabetes Mellitus or people who have not suffer diabetes mellitus disease become obstacle in behavior healthy and action style life others . Knowledge or cognitive is one of the very important domains For formation action someone (over behavior ) . Because based on experience , if somebody have knowledge so will more easy For do a action and based on study it turns out behavior based on knowledge more lasting than inappropriate behavior based on knowledge (Dewi, 2019).

Based on studies preliminary which will be held on Tuesday, April 2 2024 to cadres in RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang , there are 4 RT with amount The population in RT 1 is 165 people, RT 2 144 people, RT 3 134 people and RT 4 157 people. The number of overall residents in RW 02 Cilembu Village as many as 600 people, 285 men and 315 women , Based on the data obtained from interview with cadre data obtained , 16 people were diagnosed with diabetes mellitus type II, 13 women and three men man.

From the results interview on Wednesday, April 3, 2024 with 16 residents in the RW 04 area of Cilembu Village , obtained results that all Respondent show low knowledge about diabetes mellitus type II. Mostly from they No can explain factor risk main , symptoms beginning , and how effective prevention . From the understanding symptoms (n=16), only three of the 16 respondents who were able to mention two or more symptoms of diabetes mellitus type II. overall Respondent show behavior lack of prevention good . Only two of the 16 respondents said to consume vegetables and fruits in a way regular , while three Respondent other more often to consume food high in sugar and fat.

Based on case writer interested For do study in form thesis with title “ Relationship Knowledge and Behavior Prevention of Diabetes Mellitus Type II with The incidence of diabetes mellitus in residents of RW 04, Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024”. Based on background behind the problem above , the problem that arises in study This can identified as following . 1. Lack of knowledge about diabetes mellitus type II in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang 2024. 2. Lack of awareness will behavior prevention of diabetes mellitus type II in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024.

## 2. METHOD

Study This use method quantitative descriptive . quantitative descriptive is helpful methods to describe , to show or summarize data with a constructive way that refers to the picture helpful statistics understand the details of the data with summarize and find pattern from sample certain data . Through sample , researcher will to obtain number absolute that is not always explain the motive or the reason behind numbers That 's why . required method inferential For analysis more continue . With use statistics descriptive quantitative , researcher can understand characteristics base from the data and create more conclusions accurate about current phenomenon observed (Nurul aziza, 2023). Study This implemented July 2024 in Cilembu Village Subdistrict Recovery Regency Sumedang involving 78 respondents. Research This aiming For know connection knowledge and behavior prevention of diabetes mellitus type II with the incidence of diabetes mellitus in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang . Research This is study quantitative descriptive with use cross sectional design . Instrument research used in the form of questionnaire with ordinal scale , namely questionnaire knowledge , behavior prevention , and incidence of diabetes mellitus .

### 3. RESULTS AND DISCUSSION

#### 3.1. Results

Table 1 Distribution Frequency Diabetes Mellitus Knowledge Type 2 in Residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024

Knowledge	Frequency (f)	Percentage (%)
Not enough	41	52.6%
Enough	21	26.9%
Good	16	20.5%
Total	78	100%

Distribution results The frequency in table 4.1 shows results that knowledge residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang In 2024 , namely , respondents with knowledge less than 52% of respondents with knowledge enough 26.9%, and respondents with knowledge good 20.5%.

**Table 2**

Table 2 Distribution Frequency Behavior Prevention of Diabetes Mellitus Type 2 in Residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024

Behavior Prevention	Frequency (f)	Percentage (%)
Not enough	33	42.3%
Enough	42	53.8%
Good	3	3.8%
Total	78	100%

Distribution results The frequencies in table 4.2 show that behavior prevention residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang In 2024 , namely , respondents with behavior prevention less than 42.3% of respondents with behavior prevention enough 53.8% and respondents with behavior prevention good 3.8%.

**Table 3**

Table 3 Distribution Frequency Diabetes Mellitus Occurrence Type 2 in Residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024

Diabetes Mellitus Occurrence	Frequency (f)	Percentage (%)
No Incident	69	88.5%
There is an Incident	9	11.5%
Total	78	100%

Distribution results The frequencies in table 4.3 show results that the incidence of diabetes mellitus in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang In 2024 , the incidence of diabetes mellitus will be 11.5% and there will be no... the incidence of diabetes mellitus was 88.5%.

The chi square test is a statistical test used For test connection or influence a variables and measures strong connection between variables . The chi-square test uses SPSS assistance with a significance limit of p-Value < 0.05 which means There is meaningful relationship statistics , while p-Value > 0.05 which means No There is meaningful relationship in a way statistics between second variable .

Table 4 Chi-square Test Results of Knowledge and Incidence of Diabetes Mellitus Type 2 in Residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024

Knowledge	Diabetes Mellitus Occurrence			P-value
	No Incident	There is an Incident	Total	
Not enough	41	0	41	0.000
Enough	15	6	21	
Good	13	3	16	
Total	69	9	78	

Based on the results of the chi-square test shown in table 4.4 are significant relationship between level knowledge about diabetes mellitus and the incidence of diabetes mellitus with a p-value of 0.000, which is far below threshold significant 0.05. The data shows that from 41 respondents with knowledge less , no there are those who experience incidence of diabetes mellitus . Among the 21 respondents with knowledge enough , six

people experienced the incidence of diabetes mellitus , whereas from 16 respondents with knowledge ok , just three people who experienced the incidence of diabetes mellitus .

Table 5 *Chi-square* Test Results Behavior Prevention and Incidence of Diabetes Mellitus Type 2 in Residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang Year 2024

Behavior Prevention	Diabetes Mellitus Occurrence			P-value
	No Incident	There is an Incident	Total	
Not enough	31	2	33	0.297
Enough	36	6	42	
Good	2	1	3	
Total	69	9	78	

Based on the results of the chi-square test shown in table 4.5 are analysis between behavior prevention and incidence of diabetes mellitus with a p-value of 0.297. The data shows that from 33 respondents with behavior prevention less , 31 people did not experience the incidence of diabetes mellitus and two people experienced incidence of diabetes mellitus . Among the 42 respondents with behavior prevention enough , 36 people did not experience the incidence of diabetes mellitus and six people experienced the incidence of diabetes mellitus . While that , from three Respondent with behavior prevention well , two people no experience the incidence of diabetes mellitus and one person experienced incidence of diabetes mellitus . Because the p-value (0.297) is greater big from 0.05, result This show that No There is significant relationship in a way statistics between behavior prevention and incidence of diabetes mellitus .

### 3.2. Discussion

#### 1. Knowledge Overview

Study This show that knowledge about type 2 diabetes mellitus among residents of RW04 Cilembu Village 2024 varies . Most of them respondents , namely 41 out of 78 respondents , have lack of knowledge about type 2 diabetes mellitus . Limited knowledge This covers lack of information about symptoms , causes , and methods diabetes prevention .

Good knowledge about factor risks and symptoms Early detection of diabetes is very important For push action effective prevention and management more disease good . According to Kurniawan (2020), education sustainable health is essential For increase understanding public about diabetes and its importance proper management .

Sufficient knowledge about diabetes was also found in 21 respondents , while only 16 respondents have good knowledge . Low level of knowledge This Can So due to lack of access information or educational programs health that has not been maximum . Good knowledge about type 2 diabetes mellitus can help individual For recognize symptom start and take action proper prevention , such as change pattern eat and improve activity physical . Wahyuni (2019), stated that improvement knowledge about diabetes through counseling and campaign health can lower risk complications and increase quality life diabetes sufferers .

#### 2. Behavioral Overview Prevention

Research result show that behavior prevention of type 2 diabetes mellitus among residents of RW 04 Cilembu Village Enough varies . A total of 33 respondents own behavior lack of prevention , which includes lack of activity physical , pattern eat something that is not healthy , and minimal inspection routine health . Although 42 respondents own behavior sufficient prevention , only three respondents who indicated behavior good prevention .

Sari (2021) emphasizes importance intervention health focused change behaviors , such as healthy diet programs and activities. physique regular , for reduce risk of type 2 diabetes mellitus .

Behavior lack of prevention effective due to lack of awareness about importance prevention or inability For implement action prevention in a way consistent . In fact , the behavior good prevention , such as avoid food high in sugar and fat and regular exercise , can in a way significant reduce risk have diabetes.

Widodo (2018) stated that support sustainable community and health programs are essential For push change positive behavior and reduce prevalence of diabetes.

#### 3. Connection Knowledge with Diabetes Mellitus Occurrence

Study This find significant relationship between level knowledge about diabetes mellitus type 2 with incidence of diabetes mellitus among residents of RW04 Cilembu Village . The results of the chi-square test showed a p-value of 0.000, which means that more knowledge Good about diabetes mellitus type 2 related with decline incidence of diabetes. Good knowledge help individual For recognize symptom start and take step necessary prevention . According to Rahmawati (2022) , education effective health can increase knowledge public about diabetes and reducing prevalence disease This .

Good knowledge allow individual For more proactive in do prevention , such as do inspection health routinely and adopt style life healthy . Adequate knowledge can also increase compliance to better treatment and management of diabetes good . Hidayat (2020) stated that improvement knowledge through education and outreach programs health can help reduce burden diabetes disease in society and increase quality life sufferer .

#### 4. Connection Behavior Prevention with Diabetes Mellitus Occurrence

Although behavior prevention varies among circles residents of RW04 Cilembu Village , the results of the chi-square test show that No There is connection significant between behavior prevention and incidence of type 2 diabetes mellitus , with a p-value of 0.297. This shows that although a number of inhabitant Already apply behavior prevention , things the Not yet Enough effective in reduce diabetes incidence . Behavior effective prevention must involving commitment term length and change style consistent life . Putri (2019) emphasizes importance support environment and community in push behavior more prevention Good .

Lack of connection significant This Can So caused by behavior prevention that is not consistent or lack of knowledge about How apply effective prevention . Important for health programs For No only increase knowledge but also provide necessary tools and support for public For adopt behavior healthy . Nugraha (2021) stated that the intervention program is more focused and supported by policy strong health can help increase effectiveness behavior prevention and reduction the incidence of type 2 diabetes mellitus in the community .

#### 5. CONCLUSION

Based on results study about “ Relationship Knowledge and Behavior Prevention Diabetes Mellitus Type II with The incidence of diabetes mellitus in residents of RW 04, Cilembu Village Subdistrict Recovery Regency Sumedang 2024 ” with amount Respondent as many as 78 respondents , it was found a number of conclusion as following : 1) knowledge about diabetes mellitus type 2 in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang 2024 varies . More from half of it residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang own lack of knowledge about diabetes mellitus namely 52%. 2) behavior prevention of diabetes mellitus type 2 in residents of RW04 Cilembu Village Subdistrict Recovery Regency Sumedang The year 2024 also varies . More from half of it residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang own behavior prevention of diabetes mellitus Enough namely 53%. 3) there is diabetes mellitus incident type 2 in residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang In 2024 , it is 11%. 4) there is significant relationship between knowledge about diabetes mellitus Type 2 and the incidence of diabetes mellitus in residents of RW 04, Cilembu Village Subdistrict Recovery Regency Sumedang In 2024, with a p-value of 0.000. However , the behavior prevention for residents of RW 04 Cilembu Village Subdistrict Recovery Regency Sumedang The year 2024 is measured in study This No show connection significant with incidence of diabetes mellitus, with a p-value of 0.297.

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