

Utilisation of Hospital Outpatient Services by Diabetes Mellitus Sufferers, Analysis of BPJS Kesehatan Sample Data

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Abstract: Diabetes mellitus is a catastrophic disease that burdens the financing of the National Health Insurance or Jaminan Kesehatan Nasional Program, and sufferers continue to increase. Specific participant segments still widely use access for participants with diabetes mellitus to utilise health services at advanced-level referral health facilities. Various factors also influence access to health services at advanced-level referral health facilities. This research aims to analyse utilisation based on membership type and examine the factors that affect the utilisation of advanced outpatient services by JKN participants with DM. This research uses secondary data from the 2022 DM contextual BPJS Health sample data. The data was analysed univariately, bivariately, and multivariately with the Zero Inflated Negative Binomial regression model. The results of statistical tests showed that in outpatient care, age, type of participant, gender, treatment class, and province of participants were significantly different in terms of health service utilisation. The influence of the type of participation in the JKN program significantly affects the utilisation of services in outpatient care; the utilisation of non-recipients of contribution assistance participants is 1.16 times greater than that of the recipient of contribution assistance participants in outpatient care.

Keywords: Utilization of health services, outpatient, national health insurance participants, diabetes mellitus, sample data

INTRODUCTION

In recent years, Indonesia has faced changes in the disease burden from previously infectious to non-communicable diseases (NCDs). Diabetes Mellitus (DM) is one of the NCDs that is undoubtedly a burden of health problems in Indonesia. The 2018 Riskesdas data shows that the prevalence of individuals who have DM in Indonesia has increased from 12 million individuals in 2013 to around 16 million in 2018 based on the results of diagnoses and those who were not diagnosed. The prevalence of DM in Indonesia, according to IDF, 2021 is 19.5 million people in

Indonesia who have diabetes, which is predicted to increase to 28.6 million in 2045. The region with the highest prevalence of diabetes, according to Riskesdas 2018, is East Kalimantan (3.1 %), Yogyakarta (3.1%), and DKI Jakarta (3.4%) (Kemenkes RI, 2018). In addition, based on IDF data, the prevalence of individuals who have diabetes in Indonesia is the fifth highest number of diabetes cases among people aged 20-79 years globally in the world in 2021 (Sun et al., 2022).

According to data from the International Diabetes Federation (IDF), in 2021, around 536.6 million adults aged 20-79 lived with diabetes. This number is estimated to increase to 783.2 million in 2045, with 80.6%, or 432.7 million sufferers, living in low—and middle-income countries. (Sun et al., 2022). The increase in diabetes prevalence has become a concern for the Indonesian government in implementing the national health insurance (JKN) program because it is predicted that it will continue to increase the burden of JKN costs. Diabetes is a disease that causes significant health costs. Based on BPJS Health data from 2021 to 2023, the total claims for DM treatment costs with primary diagnosis in 2021 will reach 1.6 trillion rupiahs, and in 2022, it will reach 2.3 trillion rupiahs and in 2023 until November, it will reach 3 . trillion rupiah T (BPJS Kesehatan, 2022).

To meet the community's need for health services, especially DM patients, the health service system has begun to be developed and improved, including promotion, prevention, treatment, health maintenance, and rehabilitative services. Since the national health insurance program was implemented, diabetes mellitus has been included among the 144 diseases that must be fully serviced by First Level Facilities (FKTP), and patients are still referred if the condition is unstable or stable. However, every three (3) months, routine checks are carried out at the advanced-level referral health facilities, and the health status of participants suffering from chronic diseases is improved through Prolanis. (BPJS Kesehatan Regulations Number 2, 2019) Raheem et al. 's research, which analysed the influence of BPJS membership on the success of therapy for DM patients, found that the majority of respondents who participated in BPJS in the PBI category were 48.2%. The success rate of therapy was 49%, whereas the type of participation did not affect the success rate. (Raheem et al., 2021).

Various research results illustrate a problem of equity in the utilisation of health services, especially when looking at the segment of JKN program participants. Several studies show that health services are more utilised by rich people than poor people, assuming that DM is more common in rich people than poor people. Therefore, equality in the use of health services is a strategic issue to be studied so that it can provide input in policy making and estimate funding for improving and transforming service quality amidst health transformation. Based on the background that has been described, there has not been much research analysing the equity in the utilisation of health services by JKN participants suffering from DM in the recipient of contribution assistance (PBI) and non-recipient of contribution assistance (non-PBI) segments from BPJS Health sample data in 2022, so further research is related to analysing the utilisation of outpatient services at

advanced level referral health facilities by JKN program participants—diabetes mellitus sufferers at advanced level referral health facilities by analysing BPJS Health Sample Data for 2022.

METHOD

This research is non-experimental and uses a cross-sectional method approach with quantitative analysis through descriptive statistics. The analysis was carried out on the 2022 BPJS Contextual Health Diabetes Mellitus sample data using the Zero Inflated Negative Binomial (ZINB) model econometric approach. The sample population comes from BPJS Contextual Health DM sample data in 2022 from all participants sampled in the data set. The diagnosis of DM was identified based on the International Classification of Diseases (ICD)-10 code, namely E 10 Type 1 diabetes mellitus and E 11 Type 2 diabetes mellitus without complications. Data processing is carried out on the data collected through at least four stages of data processing, namely editing, coding, processing, and cleaning data. (Pedoman Nasional Pelayanan Kedokteran Tata Laksana Diabetes Melitus Tipe 2 Dewasa, 2020). At the editing stage, membership and referral health facility service data are selected and combined (merged). Coding on categorical variables such as participant type, gender, marital status, treatment class, and participant province was transformed into categorical variables. Processing data by creating a do file first by creating a command list in the STATA application and the data cleaning stage, namely by checking whether there is missing data and not including missing values in the analysis. Data analysis was done using the STATA statistical data processing application version 17.0. Data analysis was done using univariate, bivariate, and multivariate methods using ZINB regression.

RESULT

An overview of JKN participants with DM's use of services at Advanced Level Referral Health Facilities for outpatient care was obtained based on the analysis's findings, showing that 46.27% accessed services; these results explain that almost the majority do not utilise health services. Further analysis is needed, especially on using primary health facilities, because participants who do not access outpatient services at hospitals may be those who have utilised services at primary care. In this initial description, the sample data only describes the utilisation of outpatient services in advanced referral health facilities. The univariate description for the numerical variable, namely visits, obtained the results as shown in Figure 1.

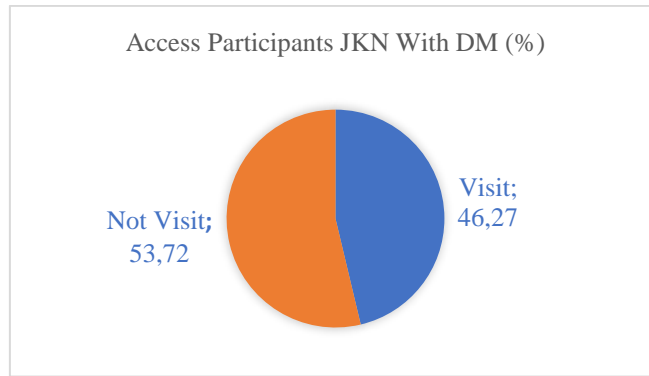


Figure 1 Access Participants JKN with DM in BPJS Kesehatan Data Sampel 2022

Analysis of the entire sample data shows that the average JKN participant with DM accessed services 5.51 times in outpatient care, with a maximum of 207 visits, as in Table 1.

Table 1. Number of JKN Participants with DM Who Access Services

Visit/Visit	Obs(n)	Mean	SD	Min	Max
Outpatient	143,496	5.51	12.63	0	207

Based on participant type, age, marital status, treatment class, and province of participation at the outpatient service levels. Age-wise, it is known that the average age of JKN participants with DM in the sample data is 59.80 years old, with a minimum age of 7 years and a maximum age of 98 years. This information pertains to JKN participants with DM at the RJTL level. This illustrates that the average age of DM patients is approaching old age, so this is also in line with the service utilisation that many older adults use services—data as in the data in Table 2.

Table 2. Age of JKN Participants with DM Who Access Services

Age of JKN Participants	Obs(n)	Mean	SD	Min	Max
Outpatient	63,788	59.80	10.16	7	98

Furthermore, the analysis shows that the results obtained are shown in Table 3 based on the categorical variables of participant type, gender, treatment class, marital status, and participant province.

Table 3. Frequency Distribution According to Participant Type, Gender, Treatment Class, Marital Status, and Participant Province (n=143,496)

Variable	Obs (n)	%
Participant Type		
• PBI	35,512	24.75
• Non-PBI	107,984	75.25

Gender		
• Man	57,667	40.19
• Woman	85,829	59.81
Marital status		
• Single	8,638	6.02
• Marry	119,606	83.35
• Divorced	15,252	10.63
Nursing Class		
• Class I	54,664	38.09
• Class II	27,095	18.88
• Class III	61,737	43.02
Participating Provinces		
• Aceh	5,047	3.52
• North Sumatra	7,243	5.05
• West Sumatra	4,162	2.90
• Riau	3,230	2.25
• Jambi	1,803	1.26
• South Sumatra	3,504	2.44
• Bengkulu	1,266	0.88
• Lampung	3,154	2.20
• Bangka Belitung Islands	1,341	0.93
• Riau islands	1,381	0.96
• DKI Jakarta	9,826	6.85
• West Java	15,897	11.08
• Central Java	20,721	14.44
• DIY Yogyakarta	3,868	2.70
• East Java	23,567	16.42
• Banten	4,609	3.21
• Bali	3,315	2.31
• West Nusa Tenggara	2,243	1.56
• East Nusa Tenggara	1,845	1.29
• West Kalimantan	2,243	1.59
• Central Kalimantan	1,625	1.13
• South Kalimantan	2,543	1.77
• East Kalimantan	3,110	2.17
• North Kalimantan	665	0.46
• North Sulawesi	2,464	1.72
• Central Sulawesi	1,893	1.32
• South Sulawesi	4,949	3.45
• Southeast Sulawesi	1,416	0.99
• Gorontalo	949	0.66
• West Sulawesi	695	0.48
• Maluku	650	0.45
• North Maluku	680	0.47
• West Papua	593	0.41
• Papua	961	0.67

This univariate description shows that non-PBI participants are 3x larger than the PBI. Because these results are only from a 1% data sample, they are not representative of the population of JKN participants. The 2022 DM contextual sample data at the outpatient level shows that, of the various participant kinds or segments, 75.25% are non-receivers of contribution aid (non-PBI). Moreover, according to gender, 59.81% of JKN participants with DM in the 2022 DM contextual sample data are female. The majority of people having married status, according to marital status, are known to be 83.35%. Most JKN participants, or 43.02%, are classified as class III participants based on their

treatment class. The provincial variable of registered participants indicated that most JKN individuals with DM in the sample data (16.42%) came from the province of East Java. Based on bivariate analysis, it is known that the influence of the age of JKN participants with DM on service utilisation is known at the outpatient level; the age variable is positively and significantly correlated with the service utilisation variable. The analysis shows that age's effect on outpatient service utilisation is 1.94%—test results as in Table 4.

Table 4. Correlation Test Results of Service Utilization with Age

Outpatient				
Variable	Coef	S.E	Prob>F	r
Age	0.003	0.0005	0.0000	0.0194
constant	2,325	0.0349		

Another bivariate U_i was carried out for categorical variables, namely participant segment, gender, marital status, treatment class, and participant province, as well as the relationship or significance of these categorical variables to service utilisation. Then, a bivariate t-test analysis was carried out for variables with groups of two categories and an ANOVA test analysis for variables with more than two categories. The results of the analysis can be seen in Table 5.

Table 5. Bivariate Test Results of Service Utilization by Participant Segment, Gender, Marital Status, Treatment Class, Participant Province (n=143,496)

Variable	Obs (n)	Outpatient		
		Mean	SD	p-value
• PBI	35,512	3.78	10.01	0.00001
• Non-PBI	107,984	6.09	13.33	
• Man	57,667	5.96	13.52	0.00001
• Woman	85,829	5.22	11.98	
Marital status				
• Single	8,638	4.97	11.95	0.00001
• Marry	119,606	5.59	12.78	
• Divorced	15,252	5.24	11.69	
Nursing Class				
• Class I	54,664	6.58	13.82	0.00001
• Class II	27,095	5.52	12.56	
• Class III	61,737	4.57	11.41	
Participating Provinces				
• Aceh	5,047	4.61	9.71	0.00001
• North Sumatra	7,243	4.41	10.99	
• West Sumatra	4,162	6.70	12.70	
• Riau	3,230	6.94	15.82	

• Jambi	1,803	3.04	8.77
• South Sumatra	3,504	4.11	10.40
• Bengkulu	1,266	3.62	10.38
• Lampung	3,154	4.22	12.46
• Bangka Belitung Islands	1,341	4.71	11.83
• Riau islands	1,381	6.64	16.06
• DKI Jakarta	9,826	7.68	15.40
• West Java	15,897	6.55	14.06
• Central Java	20,721	5.63	12.18
• DIY Yogyakarta	3,868	6.55	14.21
• East Java	23,567	5.49	12.23
• Banten	4,609	7.03	14.52
• Bali	3,315	9.15	16.35
• West Nusa Tenggara	2,243	4.44	11.29
• East Nusa Tenggara	1,845	4.81	12.95
• West Kalimantan	2,243	3.39	8.37
• Central Kalimantan	1,625	2.70	8.08
• South Kalimantan	2,543	5.23	12.96
• East Kalimantan	3,110	5.64	12.33
• North Kalimantan	665	3.68	11.66
• North Sulawesi	2,464	3.90	10.61
• Central Sulawesi	1,893	3.89	10.59
• South Sulawesi	4,949	4.52	11.70
• Southeast Sulawesi	1,416	2.76	6.93
• Gorontalo	949	2.13	6.28
• West Sulawesi	695	2.33	7.08
• Maluku	650	2.43	7.44
• North Maluku	680	1.91	6.31
• West Papua	593	2.51	6.63
• Papua	961	3.45	11.35

Meanwhile, Table 6 contains the results for the multivariate test with the Zero-Inflated Negative Binomial (ZINB) regression test.

Table 6. Zero Inflated Negative Binomial Regression Test Results

Variable	Outpatient		
	Coef	P> Z	IRR
Age	0.0018	0,00011	1,001
Participant Type			
• PBI	reff	reff	reff
• Non-PBI	0.1532	0,00011	1,165
Gender			
• Man	reff	reff	reff
• Woman	-0.0673	0,00011	0.934
Marital status			
• Single	reff	reff	reff

• Marry	-0.0032	0.851	0.996
• Divorced	-0.0401	0.061	0.960
Nursing Class			
• Class I	reff	reff	reff
• Class II	-0.0568	0,0001	0.944
• Class III	-0.3179	0.005	0.968
Participating Provinces			
• Aceh	reff	reff	reff
• North Sumatra	0.0294	0.295	1,029
• West Sumatra	0.2096	0,0001	1,233
• Riau	0.2738	0,0001	1,315
• Jambi	-0.2596	0,0001	0.771
• South Sumatra	-0.1192	0,0001	0.887
• Bengkulu	-0.2060	0,0001	0.813
• Lampung	-0.0516	0.138	0.949
• Bangka Belitung Islands	0.0611	0.191	1,063
• Riau islands	0.2185	0,0001	1,244
• DKI Jakarta	0.4220	0,0001	1,525
• West Java	0.2492	0,0001	1,283
• Central Java	0.1990	0,0001	1,220
• DIY Yogyakarta	0.1620	0,0001	1,175
• East Java	0.2038	0,0001	1,226
• Banten	0.2857	0,0001	1,330
• Bali	0.3799	0,0001	1,462
• West Nusa Tenggara	0.0179	0.645	1,018
• East Nusa Tenggara	0.0509	0.220	1,052
• West Kalimantan	-0.2231	0,0001	0.800
• Central Kalimantan	-0.0318	0,0001	0.727
• South Kalimantan	0.1752	0,0001	1,191
• East Kalimantan	0.1183	0,0001	1,125
• North Kalimantan	-0.0673	0.310	0.934
• North Sulawesi	-0.0748	0.052	0.927
• Central Sulawesi	0.0055	0.900	1,005
• South Sulawesi	0.0676	0.029	1,069
• Southeast Sulawesi	-0.2717	0,0001	0.762
• Gorontalo	-0.3910	0,0001	0.676
• West Sulawesi	-0.2652	0,0001	0.766
• Maluku	-0.1747	0.026	0.839
• North Maluku	-0.5317	0,0001	0.587
• West Papua	-0.3812	0,0001	0.683
• Papua	-0.1799	0.001	0.835
_cons	2,1867	0,0001	0.339
/inalpha	-0.0972	0,0001	0.005
alpha	0.9073		0.005
Prob>F		0.00001	

Prob>F value or significance of the ZINB regression model for outpatient and inpatient care shows a result of 0.00001 with a confidence level of 95%. It can be interpreted that an independent variable is significantly related to the dependent variable (number or frequency of service utilisation). This analysis shows that the age of JKN participants is significant in the number of services utilised by JKN participants suffering from DM at referral health facilities during outpatient visits. In outpatient care, the coefficient is positive. If other independent variables remain constant, an increase of one (1) year in the age of JKN participants with DM will increase visits by 0.18 times.

The type of participation in the JKN program on the number of services utilised by JKN participants with DM at a referral health facility is significant in outpatient visits. Assuming other independent variables remain constant in outpatient care, the coefficient value is positive, and utilisation in the Non-PBI participant group is 1.16 times greater than in the participant PBI group. Furthermore, based on the gender of JKN participants with DM, the number of service utilisation at referral health facilities is significant in outpatient care. Assuming other independent variables remain constant in outpatient care, the coefficient in the female group is negative, with utilisation 0.93 times lower than in men. The marital status of JKN participants suffering from DM is insignificant in the number of services utilised by JKN participants suffering from DM at referral health facilities, so the marital status of unmarried, married, or divorced does not influence service utilisation.

The treatment class of JKN participants with DM significantly impacts the number of service utilisation at referral health facilities during outpatient visits. Assuming other independent variables remain constant in outpatient care, the coefficient in outpatient class II is negative, with utilisation 0.94 times lower than class I and in outpatient class III, utilisation 0.96 times lower than class I. Meanwhile, the influence of provincial and regional status The number of participants using services at referral health facilities varies at outpatient and inpatient levels. In outpatient care from 34 provinces, 26 provinces are significant, and eight provinces are not significant in service utilisation compared to Aceh Province. DKI Jakarta Province, Bali Province, and Banten Province, respectively 1.52 times, 1.46 times, and 1.33 times, were the three provinces with the most significant utilisation compared to Aceh Province.

DISCUSSION

WHO often defines healthcare utilisation as the number of healthcare services used by an individual or the percentage of individuals who visit a health facility. If the use of health services is calculated from the average value of visiting participants alone, then at the RJTL level, the average JKN participant with DM accesses services 12.44 times with a minimum of 1 visit and a maximum of 207 visits in one year. For chronic diseases such as diabetes mellitus, BPJS Health runs a chronic

disease management program (PROLANIS) and a referral program (PRB). In both programs, JKN participants with DM are given information and education (promotive preventive) at FKTP and referred (curative) every 3-4 months to a referral health facility to see whether their condition is stable so that within one year, every JKN participant with DM can be referred. Referral health facility 3-4 times. The average visit of JKN participants with DM to access services is 5.51 times compared to the average visit of each participant 4 times a year, so it can be concluded that access for JKN participants with DM is open and widely used.

Various characteristics influence utilisation of health services by JKN participants with DM, and this is in line with the results of Awang's 2022 research that the proportion of visits by type 2 DM patients at referral health facilities is influenced by characteristics and access to services and based on the research results, it is known that the highest number of visits by type 2 DM patients in referral health facility it is still dominated by region 2, namely Java and the Lesser Sunda Islands with 607,149 visits (71.93%) (Awang, 2022). The highest proportion of visits with a primary diagnosis of type 2 DM was in the female gender, with a total of 514,219 visits (60.93%), with the highest age being in the pre-elderly category, namely between more than 44-64 years, namely 508,941 visits (60.30 %), and the majority are from the PBPU participant segment (33.80%) (Awang, 2022). Based on the bivariate analysis results between participant type variables and health service utilisation, the results showed significant differences between the PBI and non-PBI participant segments in utilising health services at referral health facilities, both outpatient and inpatient. Research by Rumengan in 2015 in Manado showed that based on research conducted, it was found that PBI group JKN participants who utilised health services were still low compared to the number of PBI group BPJS health participants. Implementing the health service program carried out by BPJS has helped many groups of people with low economic income to obtain appropriate health services. However, many respondents still do not take advantage of it. (Rumengan & Umboh, 2015).

Based on the results of the bivariate testing of participant variables, it is known that there are significant differences between participant type variables (PBI and non-PBI) in the utilisation of health services in outpatient settings. The non-PBI participant group utilised health services more than the PBI group. The mean in the Non-PBI group was 6.09 ± 13.33 , while the PBI group was 3.78 ± 10.01 . This is also in line with the results of the DJSN evaluation that at the outpatient level, in the case of health services for all types of diseases, the Non-PBI group utilises health services more than the PBI group (Dewan Jaminan Sosial Nasional, 2022). This explains that although the proportion of non-PBI participants in total JKN membership is more minor, their utilisation in outpatient care is more significant. Therefore, the assumption that participants who receive contribution assistance are subsidising more non-PBI participants can occur. Furthermore, based on

the age variable, it is known that age is significantly related to service utilisation. Hence, the hypothesis is that age-predisposing factors are proven to be related to health service utilisation in referral health facilities. These results may indicate that, as the theory suggests, the greater the age of JKN DM participants will be related to service utilisation.

The results of the multivariate test show that the age of JKN participants is significant in the number of JKN participants' service utilisation in outpatient visits, in outpatient care with a positive coefficient, and if other independent variables remain constant, then a one (1) year increase in the age of JKN participants with DM will increase visits by 0.18 times. Age is one of the predisposing or internal factors influencing a person's behaviour in health services. The older you get, the weaker your immune system and the more serious the disease becomes. The older you get, the more likely you need medical services to cure a disease. These results are also in line with research conducted by Ramadhani in 2022, which shows that older adults use their health insurance more for treatment. (Ramadhani & Siagian, 2022).

The overall marital status in both outpatient and inpatient visits was different; participants with marital status were different from those who were not married, so the second hypothesis was that the marital status variable was related to the use of health services at a referral health facility. A literature study regarding the application and use of Andersen's behavioural model from 2012 to 2021 revealed that marital status was often associated with the use of health services. Other research in Korea illustrates that marital status has a significant impact on the experience of outpatient and inpatient health service utilisation. (Alkhaldeh et al., 2023). Other research by Wulandari 2018 showed that married individuals used inpatient services 1,221 times. This happens because married individuals are responsible for their partner or child if a health problem occurs and utilise health facilities as soon as possible. (Wulandari et al., 2022) Chen, Lin, and Lin (2013) explain this by stating that having a partner can increase the possibility of utilising health services because partners look after each other daily, which can motivate paying attention to health. Several studies state that married status will increase the use of health services.

Meanwhile, based on the results of the multivariate analysis, it is known that the marital status of JKN participants suffering from DM does not have a significant effect on the number of services utilised by JKN participants suffering from DM at referral health facility when compared with participants with unmarried status either at the outpatient or inpatient level, unmarried marital status, married or divorced does not differ in service utilisation. This does not align with research that shows that married status is significantly related to catastrophic health spending patterns. Previous research found that the health costs of someone who is married are 1,085 times greater than that of someone who is not married. The research results are also not in line with Andersen's theory regarding

behavioural models, which states that marital status factors influence a person's behaviour in utilising health services (Solida et al., 2021).

Based on the treatment class, it is known that Class I participants are different from participants in Class II and Class III. At the outpatient level, it is known that the average visit of Class I participants was 6.58 times, Class II 5.52 times, and Class III 4.57 times with a value of $p=0.0000$ ($p<0.05$). Treatment class was significantly related to health service utilisation at referral health facilities. Participants in treatment class I are generally in better socioeconomic conditions than other treatment classes, so utilisation is more significant because it is easier to access; for example, transportation problems and other costs do not constrain them. Participants with treatment Class I rights make more use of health services; this could be due to various factors, which are possible because participants with treatment Class I have better access to health facilities and are relatively free from cost constraints in terms of transportation. However, there are other factors, such as health conditions and perception. Participants and service coverage must also be further reviewed for their influence on service utilisation. The perception of JKN participants can also influence where class strata are still considered to have differences in the provision of different medical services; this is, of course, a challenge for policymakers in the future with the plan to implement Standard Inpatient Classes (KRIS) which will undoubtedly influence patient perceptions and also the number of uses service.

Furthermore, if based on regional provinces, it is known as a whole; from the analysis results, it is known that the average number of participant visits is different in each region. The participant's provincial status has been proven to influence the number of visits or utilisation of services at referral health facilities for JKN participants with DM. JKN participants with DM in Bali Province had the highest average number of visits, with an average of 9.15 times, while the lowest for JKN participants with DM was in North Maluku Province, with an average of 1.91 visits. These results align with the JKN Statistical Data Book results, where the province with the highest RJTL service admission rate in 2020-2021 is Bali province, while the province with the lowest RJTL service admission rate is Papua province. (Dewan Jaminan Sosial Nasional, 2022).

Based on the results of the multivariate test, it is known that the influence of the regional status of the participant's province on the amount of service utilisation at referral health facilities varies at the outpatient and inpatient levels. In outpatient care from 34 provinces, there were 26 significant and eight insignificant compared to Aceh Province. DKI Jakarta Province has the most significant utilisation compared to Aceh Province at 1.52 times. DKI Jakarta Province is an area that has many hospitals with higher classes or levels and national referrals. The population is also dense, so outpatient DM patients can efficiently utilise health services in DKI Jakarta.

Furthermore, multivariate analysis with the ZINB regression model at a 95% confidence level obtained $\text{Prob}>F$ 0.0000 ($p < 0.05$), as shown in Table 5.9. The results showed that independent variables were significantly related to the dependent variable (number or frequency of service utilisation) at the outpatient level. The multivariate test results using the ZINB regression model of the variable type of participation in the JKN program on the number of services utilised by JKN participants with DM at the referral health facility were significant at outpatient visits. Statistically, it can be interpreted that the third hypothesis is that there is a difference in the level of utilisation of health services in the segment of JKN participants with DM after controlling for predisposing factors and enabling factors proven in RJTL.

Assuming other independent variables remain constant in outpatient care, a positive coefficient value is obtained, and utilisation in the Non-PBI participant group is 1.16 times greater than in the PBI participant group. The results of research such as Soewondo's research in 2021 show that participation in JKN also influences the probability of utilisation of outpatient services in private facilities. For PBI participants, the probability of utilisation is smaller than for non-PBI participants. These results suggest a shift of organisers to the public sector by PBI. Jamkesda ownership also appears to increase the utilisation of public facilities. The probability of outpatient utilisation in private facilities for Jamkesda holders is 0.031 percentage points lower than the probability of utilisation for other individuals who do not have Jamkesda. (Soewondo et al., 2021).

In general, participation in JKN can support greater utilisation of health services for outpatient and inpatient care, but for PBI families, although guaranteed, access to private health facilities is still limited, and the availability of hospital beds to meet inpatient care needs is still minimal. In this study, the type of participant (PBI or non-PBI) was not significant in terms of service utilisation, which means that the type of participant, whether PBI or non-PBI participant, did not significantly differ. This is possible because the cases that were referred or received hospitalisation were DM cases with unstable conditions, so they no longer undergo outpatient treatment according to Andersen's Health Service Use Theory that people's behaviour in utilising health services is determined by the level or degree of illness experienced and the need for health services (perceived need) (Rumengan & Umboh, 2015).

At the outpatient level, JKN participants with DM who have more access are non-PBI participants. This could happen because other factors, such as transportation costs and relatively further access from the residence to the referral health facility, make PBI participants think about incurring additional transportation costs, considering that the disease is not too severe. Hence, they choose to postpone or continue visiting the FKTP so that it is visible as bivariate results show that the non-PBI group uses more than PBI. The type of membership significantly affects the use of health services, as research shows that the higher the wealth status, the higher the possibility of

someone using health services at hospitals in Indonesia (Wulandari et al., 2022). This is also in line with Yoharani's research, which found that 61.3% of PBI respondents in Jambi City, 61.3%, do not use health services. Among JKN participants in the PBI group in Jambi City, there is a strong relationship between knowledge, attitudes, perceptions of health status, and information. With the use of health services (Yoharani et al., 2022).

CONCLUSION

The analysis results of the 2022 DM BPJS Health contextual sample data show that in outpatient services, JKN participants with DM who access services make up almost half the population of participants with DM in the sample data. This shows that access to health services is open, but several factors influence participants utilising services. JKN participants who use the most services at outpatient services are non-PBI participants with male gender, married status, and class I. Factors related to the utilisation of health services for JKN participants with DM in Indonesia based on the results of multivariate analysis in outpatient care are participant type, age, gender, and enabling factors, namely treatment class and participating province/region, DKI Jakarta Province is the region with the most excellent outpatient utilisation. The influence of the type of JKN program participation has a significant effect on the amount of outpatient service utilisation. Utilisation in the Non-PBI participant group was 1.16 times greater than in the PBI participant group. The results of this study showed that there were still differences in the utilisation level of outpatient health services among JKN participants with DM between the PBI and non-PBI participant segments. These results can be input for relevant stakeholders in the management of patients with diabetes mellitus, significantly where various factors influence service utilisation, and in order to achieve universal health coverage where JKN participants are served well without any problems, various factors that influence service utilisation need to be taken into consideration.

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