



Analysis of Adverse Selection Behavior in Independent JKN Postpartum Participants

^{1*}Adila Solida, ²Ardiyansyah Ardiyansyah

¹Faculty of Medicine and Health Science, University of Jambi, Indonesia

²Faculty of Dakwah, State Islamic University Sultan Thaha Saifuddin Jambi, Indonesia

Email: ^{1*}adilasolida@unja.ac.id, ²ardiyansyah@uinjambi.ac.id

Corresponding author: adilasolida@unja.ac.id

Abstract. BPJS Health experienced losses due to stopped payment of contributions for participants who had utilized delivery services of more than 200 billion in a period of 2 years. It was recorded that 64.7% of mothers who were about to give birth registered as participants a month before giving birth and then stopped (43%) or behaved in adverse selection in payments after delivery. The largest percentage comes from independent participants or Non-Wage Recipient Participants (PBPU). In Jambi Province, non-compliance in paying BPJS Health contributions is highest in Jambi City. It was recorded that 77,489 participants were in arrears in 2021, resulting in losses of 60.1 billion. Non-compliance with paying contributions is adverse selection behavior. The aim of this study is to analyze the factors causing adverse selection behavior among independent participants in paying post-natal JKN contributions in Jambi City. Quantitative study approach with a cross-sectional design carried out in Jambi City. Respondents totaling 96 people were selected based on accidental sampling technique. The study instrument is a questionnaire. Data analysis consists of univariate analysis stages and bivariate analysis using the chi-square test. The study results found that as many as 33.3% of independent participants behaved in adverse selection when paying JKN contributions after giving birth. There is a significant relationship between the factors number of family members ($p=0.001$), knowledge (0.000), perception of illness ($p=0.001$), clinical assessment ($p=0.000$), and willingness to pay (WTP) with adverse selection behavior in independent JKN participants postpartum. It is recommended that BPJS Health consider implementing a waiting period method for participants who will utilize maternity services. As well as increasing promotive activities for the Jambi City Government in educating and increasing public awareness about the importance of health insurance in protecting household finances.

Keywords: Adverse, Selection, Behavior, Independent, JKN.

1. INTRODUCTION

The JKN program facilitates pregnant women participating in BPJS Health to obtain insurance or cost protection while utilizing services during pregnancy, delivery services, postpartum services, post-miscarriage treatment services and post-natal family planning services. Maternity services are one of the benefits that can be received by National Health Insurance (JKN) participants which are organized by the Health Social Security Administering Agency (BPJS). (1). Free delivery is one of the advantages of JKN benefits for BPJS Health participants. In order to be able to take advantage of these services, it is accompanied by fulfilling the obligations of BPJS Health membership. All provisions regarding JKN are stated in Presidential Decree number 64 of 2020. One of the obligations of BPJS Health participants is that they are required to pay contributions regularly before the 10th of each month. However, many of these obligations are still neglected for various reasons which cause participants to behave in adverse selection.

Adverse selection is an asymmetrical condition where people tend to only register and pay contributions when they are sick, which has an impact on losses experienced by BPJS Health (3). Adverse selection is disciplinary behavior that shows a tendency for BPJS Health participants to be disobedient in paying contributions which leads to behavior. For independent participants who take advantage of childbirth, this behavior can occur because for some participants, delivery services will only be used at certain times or only when the mother's needs in labor are met, so participants will make BPJS Health payments only at the time they are needed.

The adverse selection behavior of BPJS Health participants in paying contributions, especially for users of maternity services benefits, has an impact on the losses experienced by BPJS Health. In a span of 2 years, BPJS suffered a loss of IDR 206 billion due to postnatal mothers' non-compliance with paying fees. Notes from the BPJS Health Research Development Division that 64.7% of mothers who were about to give birth registered as participants a month before giving birth and then stopped (43%) or behaved in adverse selection in payments after delivery. The largest percentage comes from Non-Wage Recipient Participants (PBPU), namely participants who work independently and each BPJS Health contribution payment comes from the participant themselves. A similar condition occurred in Jambi Province, where in 2021 the losses experienced by BPJS Health due to participants' non-compliance in paying contributions amounted to IDR 60.1 billion. Most of these losses came from Jambi City because as many as 77,489 participants were in arrears in 2021 (2).

Basically, previous studies have proven that the presence of BPJS Health is significant in reducing the financial burden on households in covering maternity care costs (4). Meanwhile, there are still many participants who are not aware of the impact they will face if there is arrears or adverse selection behavior in paying BPJS Health contributions. Participants who are in arrears will be subject to sanctions in the form of fines and their membership will be deactivated as stated in Presidential Decree number 64 of 2020.

Payment of fines will increase the expenses that a family must bear beyond the basic needs that must be met. Apart from that, inactive membership status will eliminate the financial guarantee protection from BPJS Health for participants so that it will increase health expenses that come from their own costs when needed. Health expenditures that exceed household spending capabilities will have an impact on catastrophic events. Findings from previous studies were that 31.3% of independent JKN participants in Jambi City were at risk of experiencing catastrophic spending, namely spending on health that exceeded the household

health spending capacity threshold, making it vulnerable to paralyzing the family's economy (5).

The potential for this incident to occur is for independent participants who behave in adverse selection when paying contributions. Participants behave in adverse selection so that being in arrears or stopping making postpartum payments will result in paying fines when they want to reactivate their JKN membership or being forced to cover health expenses at their own expense due to necessity. The results of previous studies show that a person's level of compliance in paying contributions is influenced by multifactors (6)(7)(8). Therefore, the aim of this study is to analyze the factors causing non-compliance by independent participants in paying BPJS Health contributions after childbirth in Jambi City.

2. METHOD

This type of study is an analytical study carried out with a quantitative approach using a cross-sectional design. The variables studied consisted of the dependent variable (non-compliance with paying contributions) and independent variables (education, income, number of family members, knowledge, perception of illness, clinical assessment, ability to pay-ATP, and willingness to pay-WTP). The study was conducted in Jambi City from March to August 2022. The study population was all independent participants in Jambi City totaling 42,592 participants. Determining the sample using the Lameshow formula was 96 respondents selected using accidental sampling technique. The instrument used was a questionnaire. Quantitative data processing goes through editing, coding, entry and cleaning stages with SPSS software. Data analysis was carried out in two stages, namely univariate analysis and bivariate analysis using the chi-square test.

3. FINDINGS AND DUSCUSSION

Based on the results of univariate analysis, the frequency distribution of respondent characteristics shows that the majority of respondents were in the age range of 25 to 34 years (63.5%). The age categorization of respondents is based on the age of the fertile couple according to the BKKBN where the wife/female partner is in the age range of 15 to 49 years who physically has good reproductive organs and is active in having children. So this age group is considered to make the most use of maternity services.

In the last education variable, it is known that the majority of respondents have studied up to high school (38.5%) followed by diploma and bachelor level (31.3%). Respondents' work generally comes from the informal sector because this study examines independent participants, namely Non-Wage Earning Participants (PBPU), where in table 1 data shows that some respondents work as entrepreneurs (56.2%).

The monthly family income variable is classified based on the categorization of population income according to BPS in 2021, namely income below IDR 1.5 million per month is included in the low income category, income between IDR 1.5 million to IDR 2.49 million per month is included in the low category, income between IDR 2.5 million to IDR 3.5 million per month is in the high category, and income above IDR 3.5 million per month is in the very high category. The frequency distribution results show that the majority of respondents' family income per month is in the range of IDR 2.5 - IDR 3.5 million per month (55.2%). The percentage obtained indicates that the majority of respondents' income based on the income classification according to BPS is in the high category.

Table 1. Frequency Distribution of Factors Causing Adverse Selection Behaviour

Variable	Criteria	(f)	(%)
Adverse Selection Behaviour	- Yes	32	33,3
	- Not	64	66,7
Education	- Low	29	30,2
	- High	67	69,8
Income	- Low	20	20,8
	- High	76	79,2
Number of family members	- Big	13	13,5
	- Small	83	86,5
Knowledge	- Less good	38	39,6
	- Good	58	60,4
Perception of pain	- Negative	45	46,9
	- Positive	51	53,1
Clinical Assessment (advanced examination)	- No need	53	55,2
	- Need	43	44,8
Capability to Pay (ATP)	- Not	24	25,0
	- Yes	72	75,0
Willingness to Pay (WTP)	- Not	34	35,4
	- Yes	62	64,6

The description of the frequency distribution of each variable in table 2 shows that the percentage of respondents who comply is still greater (66.7%) compared to respondents who behave in adverse selection (33.3%), but it is known that one third of JKN Mandiri participants are disobedient in paying postnatal BPJS Health contributions. This study shows that one third of PBPUs behave in adverse selection in paying BPJS health contributions after childbirth.

This indicates that the level of PBPU non-compliance in paying fees after childbirth still tends to be high in Jambi City. When compared with the findings in national data which shows that 43% of pregnant women stopped or were in arrears in paying BPJS health contributions after childbirth, this also occurred in Jambi City at 33.3%.

The percentage of respondents with higher education (69.8%), namely the final high school/college education category, is higher than those with low education, namely the final secondary/primary education category (30.2%). The percentage of respondents with high income (79.2%) namely \geq IDR 2,972,192,- based on the Jambi City UMK is higher than those with low income (20.8%). Respondents with more than 4 family members in the small family category (86.5%) compared to respondents in the large family category (13.5%).

The percentage of good knowledge was greater (60.4%) compared to low knowledge (39.6%). Knowledge is measured based on respondents' insight into procedures and utilization of membership in BPJS Health. Perception of illness is an individual assessment of the respondent regarding the concept of health and illness and behavior in seeking services or fulfilling health needs. The percentage of perceptions about positive pain is greater (53.1%) compared to negative perceptions (46.9%). The percentage of clinical assessments for the group that did not require further examination was greater (55.2%) than those that required further examination (44.8%).

Ability to pay is the respondent's ability to pay BPJS Health contributions regularly which is calculated based on overall family expenses beyond basic needs. The percentage of respondents who are capable is higher (75%) compared to respondents who are unable (25%). Willingness to pay is the respondent's willingness to pay BPJS health contributions regularly according to applicable regulations. The percentage of respondents who were willing (64.6%) was greater than respondents who were not willing (35.4%).

Table 2. Relationship between causal factors and postpartum adverse selection

Variable		Adverse Selection (%)		OR (95% CI)	p-value
		Yes	Not		
Education					
	- Low	14 (48,3)	15 (51,7)	2,541 (1,026-6,292)	0,071
	- High	18 (26,9)	49 (73,1)		
Income					
	- Low	6 (30,0)	14 (70,0)	0,824 (0,283-2,396)	0,929
	- High	26 (34,2)	50 (65,8)		
Number of family members					
	- Big	10 (76,9)	3 (23,1)	9,242 (2,327-36,709)	0,001
	- Small	22 (26,5)	61 (73,5)		
Knowledge					
	- Kurang baik	26 (68,4)	12 (31,6)	18,778 (6,331-55,694)	0,000
	- Baik	6 (10,3)	52 (89,7)		
Perception of pain					
	- Negative	23 (51,1)	22 (48,9)	4,879 (1,930-12,332)	0,001
	- Positive	9 (17,6)	42 (82,4)		
Clinical Assessment					
	- No need	32 (60,4)	21 (39,6)	0,369 (0,284-0,552)	0,000
	- Need	0 (0,0)	43 (100)		
Capability to Pay (ATP)					
	- Not	8 (33,3)	16 (66,7)	1,000 (0,375-2,664)	1,000
	- Yes	24 (33,3)	48 (66,7)		
Willingness to Pay (WTP)					
	- Not	32 (94,1)	2 (5,9)	0,059 (0,015-0,226)	0,000
	- Yes	0 (0,0)	62 (100)		

The results of bivariate analysis show that respondents who behave in adverse selection in paying BPJS Health contributions after childbirth are more likely to be in the group of respondents with low education (48.3%), high income (34.2%), large family members (76.9%), the level of knowledge is poor/low (68.4%), the perception of illness is negative (51.1%), does not require further clinical examination (60.4%), is able to pay fees (33.3%) and does not willing to pay dues (94.1). Based on the chi-square test with a significance value <0.005 , it can be seen that there is a significant relationship between number of family members ($p=0.001$), knowledge ($p=0.000$), perception of illness ($p=0.001$), clinical assessment ($p=0.000$), and willingness to pay ($p=0.000$) with postpartum adverse selection behavior. Meanwhile, there is no significant relationship between education ($p=0.071$), income (0.929) and ability to pay (1.000) with adverse selection behavior after childbirth.

In this study, educational factors were found to have no significant relationship with adverse selection behavior after childbirth. This can happen because the individual's natural behavior in indisciplined behavior is more dominantly influenced by other factors compared to the level of education. In line with previous studies conducted in Jambi City, there was no significant relationship between education and compliance with paying BPJS Health

contributions with a value of $P=0.089$ (8). Similar studies in Depok City in 2019 with a P value = 0.733 (9) and the Tamaung Health Center, Makassar City in 2020 with a P value = 0.579 (10) showed that education had no relationship with compliance with paying JKN contributions among independent participants.

This study also shows that income factors do not have a significant relationship with adverse selection behavior after childbirth. These results are in line with several previous studies which show that the income variable has no relationship with participants' non-compliance with paying contributions. There is no relationship between respondents' income and non-compliance with paying BPJS Health contributions in Cempaka Putih Village in 2018 with a value of $P=0.923$ (6). However, this is different from the findings of several previous studies that income has a significant relationship with non-compliance with paying contributions (11). Respondents with lower income levels were 2.848 times more likely to behave in adverse selection to pay JKN contributions compared to respondents who complied with paying contributions (12).

Income in this study is defined as the average income earned by a family every month. Income should make a big contribution in encouraging someone to pay contributions. As household income increases, there is a probability that households are willing to participate in paying for health insurance (13). Low income will reduce a person's awareness of paying contributions because they prioritize their daily needs compared to health contributions that are deemed not needed (14).

In the family size factor, the results showed that there was a significant relationship with a value of $P=0.001$ between the number of family members and adverse selection behavior after childbirth. The resulting OR value shows that participants with large family members are 9.242 times more likely to be non-compliant in paying BPJS post-natal health contributions. The results of this study are in line with previous studies that there is a relationship between family size and participants' non-compliance in paying JKN Mandiri contributions in Solok City (7).

There is a significant relationship between knowledge and adverse selection behavior after childbirth with a P value of 0.000. This finding is in line with previous studies that knowledge is closely related to the level of compliance (15). The OR results show that PBPU with low knowledge have the potential to behave 18.77 times in adverse selection in paying BPJS Health contributions after childbirth. Knowledge is a reflection of the results of a person's understanding, a good understanding of health insurance increases a person's compliance in participating and paying the premium (16).

Perceptions of pain have a significant relationship with postpartum adverse selection behavior with a significance value of $P=0.001$. Participants with negative perceptions will have the opportunity to behave in adverse selection to pay contributions of 4,879 times compared to participants who have positive perceptions of illness. These results are similar to previous studies that there is a relationship between perception and compliance with paying BPJS Health in the Wawondula Health Center working area (17).

There is a significant relationship between clinical assessment and postpartum adverse selection behavior with a significance value of $P=0.000$. Based on the OR value, there is no need for PBPU for follow-up examinations after delivery, which has the potential to increase non-compliance with paying BPJS Health contributions by 0.369 times. Clinical assessments regarding follow-up examinations for postpartum patients are decided by health workers to determine the postpartum mother's health status. A person with a compromised or sick health status will tend to access more health services so that they will have the potential to be more compliant in paying their contribution obligations. Clinical assessment is included in the need factor which is a determinant of whether a person will behave obediently or not in utilizing health services based on the Health Service Use theory by Andersen (1975). The more someone feels the need to fulfill their health needs, the more compliant they will tend to behave. This is proven by previous studies that there is a relationship between health status and compliance with paying contributions (7).

The next result is that there is no significant relationship between ability to pay and adverse selection behavior after childbirth with a P value of 1,000. The results of this study are quite different from many previous studies in that there is a close relationship between ability to pay and compliance with paying contributions. The ability to pay contributes to influencing a person in choosing the health financing pattern to be used (18), as well as increasing the willingness of the head of the family to participate in JKN organized by BPJS Health to meet their family's health needs (19). So if the ability to pay is classified as good, it will tend to increase willingness and compliance in paying BPJS Health contributions (20)(21).

In this study, the ability to pay does not have a significant relationship with adverse selection behavior. This can happen because the allocation of household health spending for independent participants in Jambi City is still not a priority, so that even a large ability to pay does not affect participants' willingness to comply with the costs of paying health insurance contributions.

There is a significant relationship between willingness to pay (WTP) and independent participants' non-compliance in paying contributions after maternity use with a value of

$p=0.000$. This factor is the most variable based on previous research to determine a person's level of compliance in paying contributions (21)(22). Willingness to pay is a form of participant's willingness to allocate specific household expenses for health financing. The concept of willingness to pay is closely related to ability to pay. The greater a person's ability to pay will increase their willingness to pay. This study shows that non-compliance is only closely related to willingness to pay. This means that there is a behavior that requires intervention to increase people's awareness of being willing to pay.

The tendency for adverse selection behavior or people only registering and paying contributions when they are sick is a challenge for BPJS Health in structuring the BPJS Health program (3). Community non-compliance is also considered to be the result of the weak sanctions regulations applied by BPJS Health to participants regarding payment of contributions (13). Even though improvement efforts continue to be made from year to year, such as the use of mobile JKN, easy access to registration - payment, BPJS care center, and applications on the BPJS health website, the results of the study show that the factors of knowledge of willingness to pay, perception of illness, clinical assessment and family size are related. The non-compliance of independent participants in paying contributions shows that these efforts still require a review of their respective effectiveness.

Especially in the case of maternity services, which is one of the health services where use can be predicted when and where it will be used. In contrast to other risks of illness which are full of uncertainty. BPJS Health can consider the system implemented by other countries regarding the waiting period that maternity services can only be obtained if registered 6 months before delivery as well as other policies that can be adopted and minimize losses experienced by BPJS Health.

4. CONCLUSION AND RECOMMENDATION

The percentage of independent participants who behave adversely in paying BPJS Health contributions after giving birth in Jambi City is 33.3%. There is a significant relationship between the factors number of family members ($p=0.001$), knowledge (0.000), perception of pain ($p=0.001$), clinical assessment ($p=0.000$), and willingness to pay (WTP) with postpartum adverse selection behavior. There is no significant relationship between education ($p=0.071$), income ($p=0.929$) and ability to pay ($p=1.000$) with adverse selection behavior after childbirth in Jambi City.

Recommendations for BPJS Health to consider implementing a waiting period method for participants who will utilize maternity services that services can be accessed if they have registered and regularly make payments during a certain period (6 months) since first registering. For the Jambi City government to increase promotional activities in educating and increasing public awareness that the allocation of health spending should be a family priority that must be fulfilled and the importance of health insurance in protecting household finances so as to change adverse selection behavior.

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