

# DEMAND ANALYSIS OF THE OSING COMMUNITY FOR FIRST LEVEL HEALTH FACILITY SERVICE AT THE NATIONAL HEALTH INSURANCE PROGRAM

Nuryadi<sup>1\*</sup>, Artawan Eka Putra, I.W.G.<sup>2</sup>

<sup>1,2</sup> Program of Public Health Doctoral, Faculty of Public Health, Universitas Airlangga, Indonesia

Email: \*nuryadi.169@gmail.com

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**Abstract:** The outpatient and hospitalizations visits was low in Banyuwangi, Indonesia indicate that community demand to health services still low. The purpose of this study was to analyze the osing community demand for first level health facility (FLHF) services at the National Health Insurance Program. Type of this research was analytic using cross sectional approach. The population in this study was the family in Kemiren and Olehsari village, Banyuwangi, Indonesia many as 2,026 households. The sample in this study as much as 60 households (300 family members). Multivariate data analysis using multiple logistic regression test. The results showed that there were two factors that affect demand for health service was a education level and knowledge factor ( $\alpha < 0.05$ ). The factors that most influence to the demand for health services was a knowledge factor. Based on Osing community demand for first level health facility service then the number of first level health facility in Glagah District was already enough. While based on the number of Osing community who participated National Health Insurance members then the number FLHF in Glagah District was already enough. The conclusion, the higher education level and knowledge of the community, the higher demand for health services.

**Keywords:** Demand analysis, Health Services, First Level Health Facility, National Health Insurance

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## Introduction

Nasional Health Insurance (NHI) in Indonesia had been implemented since Januari 1, 2014 that organized by Badan Penyelenggara Jaminan Sosial (BPJS) Kesehatan (Social Security Administrator Agency on Health). Provider of health services in NHI were first level health facilities (FLHF) include primary health center, clinic, practice of physician, practice of dentist; advanced level referral health facilities include hospital (Indonesia, 2013b).

Demand analysis for health services is one way to determine how many the demands, and the factors that most influence the utilization of health services. Demand analysis can be useful as a basis for developing health care policy and planning, to determine hospital bed allocation, as a model to describe the annual changes in individual health care expenditures, and to forecast the adequacy of health care facilities (Feldstein 1983)

Based on data from Susenas (National Socio-Economic Survey) by Badan Pusat Statistik (Central Statistics Agency) of East Java, the incidence of illness in Banyuwangi Regency increased as indicated by the percentage of population who have health complaints increased by average 1.68% on 2011 to 2013 (in 2011 as much as 31.34%, 2012 as much as 32.55%, and 2013 as much as 34.70%). Meanwhile, the percentage of outpatient visits in Banyuwangi Regency in 2011-2013 averaged 51.82% (in 2011 as much as 47.09%, 2012 as much as 46.69%, and 2013 as much as 61.68%). The percentage of residents who were hospitalized in the last year in 2011-2013 averaged 2.16% (in 2011 as much as 2.32%, 2012 as much as 1.73%, and 2013 as much as 2.42%). The low number of outpatient and inpatient visits in Banyuwangi Regency indicates that low public demand for health services in Banyuwangi Regency, including osing community. The Osing tribe is a native people of

Banyuwangi or also referred to as "wong Blambangan" and is the majority population in several districts in Banyuwangi Regency.

According to Feldstein (1983) and Trisnantoro (2006), factors affecting demand for health services consist of cultural-demographic characteristics, disease incidence, economic factors, and health service availability factors. Cultural-demographic characteristics include: age, gender, education, knowledge, marital status, and number of family members. While the economic factors include: tariffs, income, and ownership of health insurance. A Grossman model of the individual demand for Health care services, factors affecting demand for health services consist individual/client factors (age, sex, education, occupation), healthcare resources factors (supply, access, acceptability), prepayment factors (private insurance, national health system, out of pocket system), and environment factors (physical, economic, social, cultural) Grossman (2000).

The purpose of this research were : 1) Identifying the factors of demand (age, sex, marital status, number of family members, education level, knowledge, belief, disease incidence, income, availability of health services, participation on national health insurance, tariff / premium of national health insurance program) of Osing community, 2) Identifying the demand of the osing community on the first level health facility (FLHF) service in the national health insurance (NHI) program, 3) Analyzing the factors affecting the demand of the osing community on FLHF service, 4) Forecasting the needs of FLHF for osing community.

### Method

The type of this research is analytic using cross sectional approach. Population in this research is family of Kemiren Village and Olehsari Village of Glagah District of Banyuwangi Regency as much as 2,026 families. The sample in this research is family in Kemiren Village are 27 families (135 family members), and Olehsari Village are 33 families (165 family members). Total sample is 60 families (300 family members). Data collection is done through interviews and documentation studies, and presentation of data in the form of tables and drawings. Multivariate data analysis using multiple logistic regression test.

### Result and Discussion

The results were described include identifying the factors of demand, identifying the demand of the osing community on the first level health facility service in the national health insurance program, analyzing the factors affecting the demand of the osing community, and forecasting the needs of first level health facility for osing community, as follows

#### Factors of Demand for FLHF services

Factors affecting demand for health services are cultural-demographic characteristics, disease incidence, economic factors, and health service availability factors. Cultural-demographic characteristics are age, sex, education, knowledge, marital status, and number of family members. Economic factors are tariffs, income, and ownership of health insurance.

Table 1 Description of Demand Factors

	N	Minimum	Maximum	Mean
Age	221	1	76	30.57
Number of Family Members	221	1	6	4.04
Knowledge	221	0	11	3.54
Belief	221	0	10	5.19
Availability of Health Services	221	0	12	6.68

Table 1 shows that average age of respondents was 30 years, average of family had 4-5 members. Based on the above table, average respondent has knowledge score related to the Health Insurance program were 3.54. It shows the lack of knowledge of using community about the NHI program. The assessment of knowledge about NHI includes knowledge related to NHI and the Health Social Assurance Administering Agency, FLHF in NHI era, contribution of NHI premium, self-knowledge for illness, and the need for health services. Based on the above table, the average respondent had a score of 5.19 (of a total score 10) in beliefs for known health services. Belief score measured from beliefs of using community to health service include hospital, clinic, doctor practice, primary health center, Auxiliary primary health center / Village health post, midwife practice, and nurse practice. Therefore, it could be concluded that the using community in Glagah District had a moderate level of beliefs for health services. Based on the above table, average health care availability score was 6.68. Respondents' knowledge scores related to the availability of health facilities was 7 and could be categorized that the overall availability of health services in Banyuwangi Regency was good. Some respondents already have a means of transportation that can be used to access health facilities with an average travel time of 10 minutes to health facilities.

*Table 2 Description of Other Demand Factors*

No	Demand Factors	Frecuency (f)	Percent (%)
1	Sex		
	Male	104	47
	Female	117	53
		221	100
2	Marital Status		
	Single	84	38
	Married	137	62
		221	100
3	Education Level		
	No School	39	17.6
	Elementery School	100	45.2
	Junior High School	36	16.3
	Senior High School	39	17.6
	College	7	3.2
		221	100
4	Income		
	< 1,426,000	0	0
	1,426,000-2,852,000	2	3
	>2,852,000	58	97
		60	100
5	Participation of National Health Insurance		
	Non members	99	45
	Members	122	55
		221	100
6	NHI premium		
	Unreachable	37	62

Reachable	23	38
	60	100

Table 2 shows that most of the respondent's gender (osing community) was female as much as 53%, most of the respondents were married as much as 62%, most of the respondents had a primary school (PS) education as much as 45.2%, most of the respondents had income < Rp 1.426.000 as much as 97% (average income was low), most of the respondents were non members in the National Health Insurance as much as 55%, and respondents as members in the National Health Insurance were mostly as members of beneficiaries as much as 75%, respondents considered that the National Health Insurance premium was unreachable as much as 62%.

Based on the data collection, there were 32 types of diseases identified, the disease that was often experienced by the osing community in Glagah District, Banyuwangi Regency was a fever as much as 26.7% (72 case) with the average frequency of disease incidence 1 - 4 times and length of stay on illness 1 -12 days.

**Demand for FLHF services**

Demand for FLHF services is measured by the choice of community visits to Paspan Glagah primary health center or Linawati clinic if illness, the types of services used include public outpatient including mother and child health, outpatient for dental services, inpatient, or emergency unit.

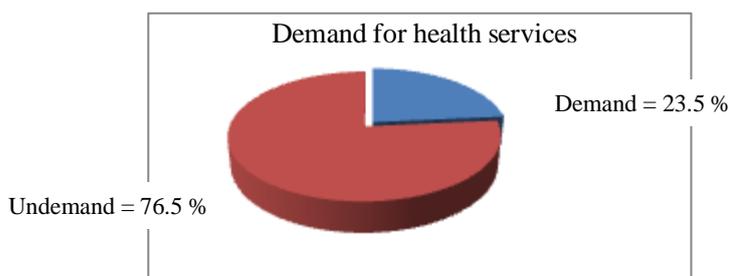


Figure 1 Demand of the osing community for health services

Figure 7 shows that most of osing community in Glagah district were undemand for FLHF service of Paspan’s primary health center in Glagah and Linawati Clinic as much as 76,5%. While demand for FLHF service only was 23.5%. The osing community of Glagah District who have demand for Paspan’s primary health center in Glagah and Linawati Clinic services mostly use general clinic service as much as 89%. And than, the types of health services utilized by the community were as follows.

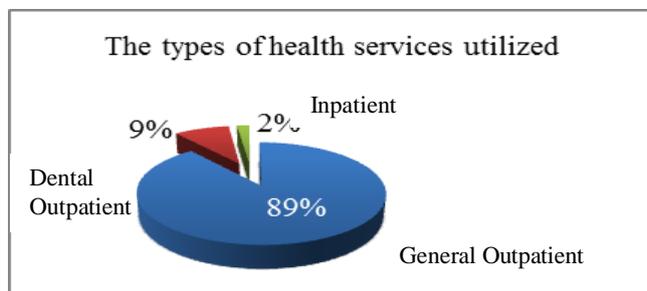


Figure 2 Type of Health Services Utilized by The Community

Based on Figure 8, the majority of respondents use outpatient services for general that was 89%. Some respondents used outpatient services for dental as much as 9% and for hospitalization as much as 2%.

The osing community who was undemand for FLHF services, other alternative health services that were utilized as follows.

Table 3. Distribution of Alternative Health Services for Undemand to FLHF

No	Health Service	Frecuency (f)	Percent (%)
1	Practice of midwife	12	5.6
2	Just ignore it	59	27.6
3	Treated alone	59	27.6
4	Practice of dentist	1	0.5
5	Practice of general physician	11	5.1
6	Tradistional healer	10	4.7
7	Clinic	14	6.5
8	Alternative medicine	10	4.7
9	Practice of nurse	36	16.8
10	Hospital	2	0.9
	Total	214	100

Based on table 3, if The osing community don't visit the Paspan's primary health center in Glagah and Linawati Clinic, most of respondents choose to treat alone and just ignore it was each 27.6%. Respondents said that the illness they feel was enough just by resting at home.

#### Factors Affecting Demand on FLHF Services

Based on the analysis with multiple logistic regression test, there were two factors that influence the demand of health services were Education Level and Knowledge ( $\alpha < 0,05$ ). The most influential factor to the demand for health services was Knowledge factor because it had the highest Exp (B) value as much as 1.188.

The level of education affects statistically the demand for FLHF services with OR 0.5, CI 95%. The osing community, Glagah District with high education level had a risk was 0.5 times greater to have demand for FLHF services compared with low educated. The variables of knowledge influence statistically to demand of FLHF services with OR 1.18, CI 95%. The osing community, Glagah District who have a high level of knowledge on the National Health Insurance have risk 1 times greater risk to have demand for FLHF services compared with low knowledge.

Based on the results of statistical tests above, indicates that there was a significant effect of education to the demand for health services on national health insurance for the osing community. The results of this study was in accordance with the results of research conducted by Nuraeni et al., (2012), which states that there was a meaningful relationship between the level of education and demand for health services in the Cilandak primary health center in South Jakarta, and also in accordance with research conducted by Serli (2013), showing that there was a relationship between education level and community demand for inpatient services in the work area of Medan Deli primary health center, Bromo primary health center and Kedai Durian primary health center, and also in accordance with research conducted by Parung (2014) which states that Education had a positive effect on the demand for health services.

Compliance between the results of this study with the results of previous research because the level of education affect the behavior of a person in using health services. Education provides the ability to access information related to health services, so it will determine a person's choice for health care facilities to be visited to solve his health problems. A person's educational status has an effect on the utilization of health care services, because

education status influences one's awareness and knowledge about health. It is often a barrier to the utilization of these services is the lack of awareness and knowledge about matters relating to health behavior (Serli, 2013).

Based on the results of statistical tests above, indicates that there was a significant influence of knowledge for the demand of health services in the National Health Insurance program for the osing community. The results of this study were accordance with the results of previous studies that have been conducted by Serli (2013), which states that there was a relationship between knowledge with community demand for inpatient services in the work area of Medan Deli Primary Health Center, Bromo Primary Health Center and Kedai Durian Primary Health Center, as well as accordance with research by Yusniar (2012), which also states that there was a correlation between knowledge and the service utilization of Liudi Primary Health Center, Bila Village, Sabbangparu district of Wajo Regency. Also accordance with research by Rakinaung et al., (2012), which states that there was a significant relationship between knowledge with Action in the utilization of Molompar Primary Health Center, Molompar II Village, East Tombatu district of Southeast Minahasa Regency, and also accordance with research by Wahyuni (2013), which states that there was a relationship between knowledge and outpatient service utilization of Tenggarang Primary Health Center in Bondowoso Regency.

The compatibility between the results of this study with the results of previous research because knowledge or cognitive is a very important domain in shaping one's actions (over behavior) (Notoatmodjo, 2003). According to Feldstein (1983), the knowledge factor is one of the factors that determine the actions of the community in choosing health services. The level of knowledge of the community is high, not always can increase the demand of osing community of Glagah district to the service of Paspan Glagah Primary Health Center and Linawati Clinic. According to Green in Notoatmodjo (2003), states that increased knowledge does not always cause behavioral changes. Although most people are well aware of the types of services available in Paspan Glagah Primary Health Center and Linawati Clinic, not necessarily the community has a demand for Paspan Glagah Primary Health Center and Linawati Clinic.

Meanwhile, Based on the results of the above statistical tests, it shows that there were no significant effect: age, marital status, the number of family members, belief on service, incidence of disease, health insurance ownership, tariff / pemium to demand for FLHF service on national health insurance for osing community. According to Feldstein (1983), factors affecting one's demand for health services are cultural-demographic characteristics (age, gender, marital status, family size, education level, knowledge, and belief), disease incidence, and economic factors (income). In addition, according to Trisnantoro (2006), the factors of health services availability (availability of health services, participation in the NHI program, tariff / premium of the national health insurance program) is another factor affecting the demand for health services. On the other hand, there are influence of distance, income, per capita food expenditure, household size, the severity of illness, the average years of formal education, age, and location to demand for healthcare (Ichoku, and Leibbrandt, 2003).

The dependent variable used was demand for private hospital care while the independent variables used include: age, educational attainment, ownership of health insurance, distance to nearest health facility, wealth index, place of current residence, religion and access to information. From probit regression model, the coefficients for age, educational attainment, distance to nearest health facility, ownership of health insurance, wealth index (through the four wealth quintiles against the first wealth quintile), place of current residence, religion and access to mass media were found to be statistically significant at different levels in determining demand for private hospital care in Kenya. The study concludes that both demographic and socioeconomic factors are significant in determining demand for private hospital care (Nyambura, 2016).

Research by Sarwono (2011), which shows that there was a significant relationship between the sex with the utilization of local health insurance in Tumbang Talaken Primary Health Center, Manuhin district, Gunung Mas Regency. In addition, the results of research conducted by Wahyuni (2013), which proves that there was a relationship between the incidence of illness with the outpatient services utilization of Tenggarang Primary

Health Center in Bondowoso, also not in accordance with the theory of Notoatmodjo (2003), which states that the incidence of disease and illness induce a person's response to conduct health seeking behavior, and also not in accordance with the theory of Feldstein (1983), which states that awareness of disease or the desire for treatment for prevention determines a person's decision in health services seeking. The rise of disease and unhealthy conditions alter the pattern of chronic disease changes to the critical determinants of the need for health care. Another opinion says that rising family incomes will increase demand for health services that are mostly normal goods. However, there are also some inferior goods health services, it is an increase in people's incomes leads to a decrease in consumption (Trisnantoro, 2006).

Sex factors had no effect can also because the respondents in this study were homogeneous, where the majority of respondents were female, so there was no difference in demand for FLHF services (Paspan Glagah Primary Health Center and Linawati Clinic). The solution for further research is to interview respondents with a balanced proportion of male and female.

The factor of the illness incidence had no effect also be caused by different levels of tolerance to illness sense. The osing community of Glagah district had different levels of tolerance for a disease that suffered. When a person is illness, they prefer to ignore disease and continue their activities without trying to cure the disease because the disease was only a small illness and will recover when made to work. Instead, someone else with the same disease have a different thought, by which if he suffered a disease, although the disease is only small diseases, he immediately perform a variety of ways to cure the disease. This is accordance with the theory by Lumenta (1989), describes that person's reaction to the symptoms of the disease relies heavily on his experience, as well as on surrounding group social and cultural factors. Some groups consider a symptom to be very worrying, but other groups can be ignored. This acceptance will determine the reaction in the treatment seeking behavior.

#### **Needs of FLHF in Glagah Subdistrict of Banyuwangi**

The overall prediction of osing community in Glagah district that had demand for FLHF service was the population of Glagah district in 2015 multiplied by percentage of osing community in Glagah district which had demand for FLHF service which is  $34.914 \times 23,5\% = 8,205$  people. The ideal condition was 1 physician serving 5,000 participants. The needs of physicians who should be available in Glagah Subdistrict, Banyuwangi on 2015 was 2 people. In Glagah district, there were FLHF that have cooperated with BPJS Kesehatan (Social Security Administrator Agency on Health), it were Paspan Glagah Primary Health Center and Linawati Clinic. Paspan Glagah Primary Health Center had 1 general physician, while Linawati Clinic had 2 general physician. Total availability of general physician in FLHF in Glagah district who have cooperated with BPJS Kesehatan (Social Security Administrator Agency on Health) were 3 physicians. Thus, based on the demand of osing community for FLHF service so the number of FLHF in Glagah district was enough even the general physician more one person.

The accordance or adequacy of the number FLHF can be encouraged by the active role of the community that had established the clinic as a form of participation in accordance with the provisions. FLHF that had cooperate with BPJS Kesehatan was Primary Health Center, Clinic, physician practitioner, dental practitioner and hospital type D. Nevertheless, it was needed clear arrangement and based on correct forecasting in order to avoid any existing FLHF excess. This can happen, considering there was already a clinic although not cooperate with BPJS Kesehatan, it was Amanah Clinic. Even may be, there were the establishment of a new clinic furthur because it was considered as an opportunity or business, but they do not needs study of health care facilities.

If it was based on the number of osing community in Glagah district who was a participant of NHI (not based on demand of osing community for FLHF service) so  $45\% \times 34,914 = 15.711$  people. The needs of physician should be available in Glagah District, Banyuwangi in 2015 were 4 physicians. Thus, the number of FLHF in Glagah district was sufficient but the general physician was less than one person.

If it was based on the total population of osing community in Glagah district so needs for FLHF as follow :

Table 4 Needs for FLHF based on Total Population

	Total Population 2015	Needs of Physician	Distribution Number of Physician in FLHF Should be			Total Needs of FLHF
			PHC *)	Clinic *) (C)	Independent Physician Practioner (IPP)	
Version 1	34.914	7	2	2	3	5 (1 PHC, 1 C, 3 IPP)
Version 2	34.914	7	2	4	1	4 (1 PHC, 2 C, 1 IPP)

Note : Based on standard, each one of primary health center (PHC) / Clinic have two physician. One physician serve 5,000 people

Based on table 3, the number of FLHF in Glagah District was not enough, and the deficiency number : 1) Version 1 were less 3 practice of physician, 2) Version 2 were less 1 Clinic, and 1 practice of physician

### Conclusion and Recommendation

The conclusion of the results of this study as follows: demand factor for FLHF service describe that the average age of respondents 30 years, each family contain 4-5 members, scores of knowledge related to NHI program as much as 3.54 (less), belief score in health services as much as 5.19 (medium), health care availability score as much as 6.68 (good). Most of the respondents were female, married, had primary school (SD) education, had income <Rp 1.426.000 (low), non participan in National Health Insurance, unreached for NHI premium. There were 32 types of diseases identified, the disease that is often experienced by the society osing is a fever with an average frequency of illness occurrence 1-4 times and duration of sick days 1-12 days. Majority of the osing community undemand for FLHF services (Paspan Glagah Primary Health Center and Linawati Clinic).

There were two factors that influence the demand for health services, which was Education Level and Knowledge ( $\alpha < 0,05$ ). The most influential factor on demand for health services was knowledge factor because it has the highest Exp (B) value of 1.188. The higher level of education and knowledge of the community, the higher demand for health services.

Based on demand of the osing community for FLHF service, so the number of FLHF in Glagah district was enough. If based on the number of the osing community who participated in NHI so the number of FLHF in Glagah district was enough too. If based on the total population of osing community in Glagah district so needs for FLHF was the number of FLHF was not enough, and the deficiency number : 1) version 1 were less 3 practice of physician, 2) version 2 were less 1 Clinic, and 1 practice of physician.

The recommendations based on the results of this study as follows : 1) BPJS Kesehatan (Social Security Administrator Agency on Health) cooperate with FLHF, local government, and community organizations to increase knowledge related to NHI program through socialization both in FLHF and in community; 2) BPJS Kesehatan (Social Security Administrator Agency on Health) applying quality standard of service hardly, and FLHF provide service according to quality standard so the community trust was higher; 3) BPJS Kesehatan (Social Security Administrator Agency on Health) needs to consider the obligation to become a members was a family that has enough income, have done a mapping of capable families, and proactive for the recruitment of NHI members; 4) BPJS Kesehatan (Social Security Administrator Agency on Health) cooperate with Regency Health Office to conduct arrangement and control of new FLHF, and FLHF that cooperate with BPJS Kesehatan

(Social Security Administrator Agency on Health) before; and 5) The next study to forecasting needs of health facilities on regional or national levels

### Acknowledgements

Acknowledgments were presented to LPDP of Finance Ministry, Ministry of Technology Research and High Education. Indonesia. Thank you as well as to Doctoral Program of Health Sciences, Public Health Faculty of Universitas Airlangga

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