

Factors Impacting Sumatran Private Medical Students Inclination to Work in Rural Areas

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ABSTRACT

At present the progress of Indonesia's health currently has significant problems with the unequal distribution of doctors in rural areas; doctors are only concentrated in urban areas. The environment and policies at private universities have a big influence on the educational process, which causes the low interest of private medical students to work in rural areas. Getting the right results on the pattern of interest in private medical students to work in rural areas will ultimately help policymakers to resolve differences in the distribution of doctors in Indonesia. This quantitative analytical study was conducted at 12 private medical faculties on the island of Sumatra, Indonesia. The total sample obtained was 446 active private medical students in 2016 from a total population of 5,106 students. Data were collected by questionnaire and analyzed using software namely SPSS. From the results of the binary logistic regression analysis, there are four dominant factors of private students that affect the interest in working in rural areas. Then a multivariate logistic regression analysis using the enter method was conducted that the tendency of medical students to work in rural areas was 58% for private universities. By using patterns and student acceptance variables, it is expected to increase the interest of private medical students working in rural areas, and ultimately be able to distribute doctors equally in Indonesia.

Keyword: Doctor's contribution, equity, student interest, rural areas.

INTRODUCTION

The development of Indonesia's health sector currently has a very significant problem with access to health services in the form of uneven distribution of human resources, namely health care workers.⁽¹⁾ There are very many doctors in Indonesia. However, most doctors work in urban areas. Therefore many islands and underdeveloped areas in Indonesia have inadequate numbers of health workers.⁽²⁾

The environment and policies at private universities influence the educational process, which basically influences private medical students to develop different goals and desires. Thus producing various doctors is a study not yet developing a description or observation of the pattern in which medical students from private institutions express their interest in working in rural areas.

In research Argentine medical students found that the following factors and characteristics were related to interest in medical practice in rural areas: gender (women more likely than men), older age, having parents who did not graduate from college, exposure or services in high malnutrition areas, focus on pediatrics and high altruistic motivation.⁽³⁾

The research shows that 9% of medical students from private institutions are interested in working in rural areas. With the explanation that 5 students (9.2%) out of 54 private tertiary education students studied were ready to work in rural areas after graduation. There were also 46 students who wanted jobs after graduation, and only three (6.52%) who wanted to work in rural areas, and 5% of students who expressed interest in working in rural areas in the long term.⁽⁴⁾

This study looks at the factors that differentiate the patterns of medical students who show an interest in working in rural areas for the Faculty of Private Medicine in being able to help the right policy maker to resolve the disparity in the distribution of doctors in Indonesia and increase our knowledge in this matter. The island of Sumatra was chosen as the location of the study because there were medical students from the private Faculty of Medicine.

The purpose of this study is to determine the pattern of acceptance of medical students in private tertiary institutions and increase interest in working in rural areas

METHOD

This type of research is quantitative analytic design. This research was conducted in Palembang. The population of this research is preclinical medical students from 12 private medical faculties in Sumatra. The results were calculated according to attendance data from each university in July 2016. All population units were taken as sample units (saturated samples), therefore there were 446 active private medical students in 2016 out of a total population of 5,106 students.⁽⁵⁾

In this research, the data collected is secondary data. The results of the questionnaire were distributed and collected through the Google Form application.

The inclusion criteria were preclinical medical students who were registered at the private medical faculty in Sumatra and agreed to answer the questionnaire in full. The exclusion criteria used were preclinical medical students who were registered at a private medical faculty in Sumatra and did not agree to answer the questionnaire or participate in this study. Analysis of the pattern of acceptance of medical students in private tertiary institutions to work in rural areas using multivariate logistic regression analysis with the enter method.

The dependent variable in this study is students' interest to work in rural areas and the independent variable is a factor that influences the interest of medical students to work in rural areas. Descriptive statistics and normality tests are performed, followed by multiple linear regression to model the relationship between the dependent variable and the independent variable. Confounding potential is controlled by using multivariate logistic regression analysis by analyzing the relationship of all variables simultaneously. Statistically significant results were defined as $p < 0.05$. Statistical analysis was performed using IBM SPSS Statistics Base 22.0.⁽⁶⁾

RESULT

In this study the average age of students in private tertiary institutions was 21 years starting from 18 years and a maximum age of 36 years. In terms of gender, the majority of students were female (309 students [69.3%]). Most students are in their third year of college (180 students [40.4%]), single (268 students [60.1%]), and use family funds to finance their education (426 students [95.5%]) .

Table 3.1. Frequency Distribution of Private Medical Students by Age, Gender, Level of Education, Marital Status and Source of Funding⁺

Characteristics	Private Universities	
	Number (n)	Percentage (%)
Age		
Mean ± SD	21.25 ± 1,25	
Median	21 years	
Minimum	18 years	
Maximum	26 years	
Gender	n	%
Male	137	30.7
Female	309	69.3
Significance		p<0.0001
Year of study	n	%
First Year	42	9,4
Second Year	49	11,0
Third Year	175	39,1
Fourth Year	180	40,4
Marital Status	n	%
sSingle	268	60,1
In relationship	177	39,7
Married	1	0,2
Source of Funding for Education	n	%
Family	426	95,5
Scholarship	18	4,0
Study loan	1	0,2
Part time job	1	0,2

Source: Results of current study obtained following statistical treatment of data from questionnaire.

⁺Refers to source of funding needed to finance medical education of survey respondents

The values in table 3.2 show that the higher the mean score (%), the greater the influence of the corresponding variables on students' interest in working in rural areas. In other words, the higher the percentage, the higher the interest in working in rural areas.

Table 3.2. Mean score of each questionnaire's item

Factors	NB	Variable Description	Private College
Predisposing	(X1)	Background or experience of living in villages.	67.94%
	(X2)	Experience of visiting rural area	71.41%
	(X4)	Student's lifestyle	70.57%
	(X3)	Travelling hobby	74.83%
	(X5)	Social motive or reasoning	75.90%
	Mean		72.13%
Enabling	(X13)	Village size	70.01%
	(X15)	Curriculum in the university about rural area	70.07%
	(X14)	University location	68.44%
	(X8)	Family economic status	69.06%
	(X7)	Income/aid/incentive potential	76.74%
	(X9)	Community culture in rural area	74.38%
	(X6)	Facility or infrastucture in rural area	76.63%
	(X10)	Carreer opportunity	77.97%
	(X11)	Academic opportunity	77.41%
	(X12)	Geographical condition of rural area (considered from physical condition, security, and people's density)	78.42%
	Mean		73.91%
Reinforcing	(X17)	School obligation to work in rural area	70.74%
	(X19)	Proximity of the location to the spouse	67.60%
	(X16)	Government regulation about working in rural area	75.00%
	(X18)	Proximity of the location to the family	75.34%
	Mean		72.17%
Mean			72.74%

Source : The result of processing questionnaire using SPSS 18.

Table 3.3. Variables that simultaneously affect interest to work in rural areas for private university

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I for EXP(B)	
							Lower	Upper
V1(1)	0.616	0.269	5.224	1	0.0220	1.851	1.092	3.138
V2(1)	0.473	0.280	2.866	1	0.0900	1.606	0.928	2.778
V6(1)	-0.922	0.336	7.559	1	0.0060	0.398	0.206	0.767
V8(1)	-0.536	0.307	3.048	1	0.0810	0.585	0.321	1.068
V9(1)	0.705	0.321	4.812	1	0.0280	2.024	1.078	3.799
V10(1)	0.566	0.333	2.886	1	0.0890	1.762	0.917	3.385
V18(1)	-1.103	0.347	10.110	1	0.0010	0.332	0.168	0.655
Constant	1.299	0.373	12.113	1	0.0010	3.667		

From the results of binary logistic regression analysis in table 3.3 simultaneously shows all variables that contribute to enhance the chance of private university students to work in rural areas. However, there were only some variables that simultaneously affected students' interest to work in rural areas significantly ($OR > 1$). There are four dominant factors of private students that influence interest in working in rural areas.

Table 3.4. Multivariate Logistic Regression Analysis between independent variables computed against motivating factors affecting the inclination of private university students to work in rural areas

Factors	Independent Variables	Coefficient	<i>p value</i>	OR	95% CI	
Predisposing Factors	Background of living in rural areas (X1)	-0.545	0.009	0.580	0.385 0.873	-
Supportive Factors	Experience of visiting rural areas (X2)	1.041	0.000	2.833	1.869 4.296	-
Driving Factors	Facilities in rural areas (X6)	-0.684	0.011	0.505	0.299 0.854	-
	Economic status of family (X8)	-0.692	0.001	0.501	0.334 0.750	-
	Career opportunities (X10)	0.789	0.004	2.201	1.293 3.747	-
Predisposing Factors	Government law to work in rural areas (X16)	0.551	0.017	1.734	1.103 2.728	-
	Proximity of location to family (X18)	-0.895	0.001	0.409	0.241 0.693	-
<i>Constant</i>		0,758				

The result of logistic regression analysis using Enter Method obtained a regression equation model as follows:

$$y = \text{constants} + a_1x_1 + a_6x_6 + a_8x_8 + a_{10}x_{10} + a_{16}x_{16} + a_{18}x_{18}$$

$$y = 0,758 + (-0,545)(1) + 1,040(1) + (-0.684)(1) + (-0,692)(1) + 0,789(1) + 0,551(1) + (-0,895)(1)$$

$$y = 0.323$$

From the above calculation, it may be possible to predict the private students' inclination to work in rural areas (population <5,000 per km²) by using probability formula as follows:

$$p = 1 / (1 + e^{(-y)})$$

Notes:

p = probability of occurrence

e = natural number (2.7)

y = constants + a₁x₁ + a₆x₆ + a₁₀x₁₀ + a₁₈x₁₈

p = 1 / 1 + 2.7 (-323)

$$p = 1 / 1.723$$
$$p = 0.5800 = 58\%$$

Therefore, the probability or chance of inclination of private medical students to work in rural areas (population <5,000 per km²) could be extracted from factors having biggest chance to smallest chance simultaneously, this was 58% for private universities.

DISCUSSION

In this study it was found that women were significantly more numerous than men. This is suggestive and reflects the current situation in Indonesia where there are more female medical students than male students with very large margins as explained earlier.⁽⁷⁾ In general, female students are not married and their source of funds to support education comes from families they. Based on the frequency distribution, it is clear that more private students tend to work in rural areas. This finding makes sense because these students were not influenced by other variables.

Family style and economic status significantly support the interest of private medical students to work in rural areas. Research conducted in Australia shows that lifestyle is one of the important factors in encouraging the interest of health workers to work in rural areas.⁽⁸⁾ A survey of Ghanaian medical students reports that students from low economic families are more interested in working in rural areas.⁽⁹⁾ As a consequence of this study in Ghana recommending that medical education registration be given to students who qualify from low-income families.⁽¹⁰⁾ The economic status of medical student families is an important factor that is significantly related to the tendency to work in rural areas.

Other supporting data that seem to influence the tendency of private medical students to work in rural areas is to want the availability of resources and facilities in locations that are not limited to work facilities but also other facilities. The results of this study are consistent with exploratory studies in India saying better facilities in much more advanced urban areas prevent medical students from working in rural areas and choose urban environments instead.⁽¹¹⁾

Inadequate or inadequate facilities will cause a lack of student interest to work in rural areas. A study from the University of Calgary states that for financial factors, the factor of rejection of recreation and educational facilities for children is also an important factor in choosing to work in rural areas.⁽¹²⁾

The study also says that providing income, benefits or incentives is a very powerful motivator that can persuade private students to work in rural areas. The article in Turkey also said that monetary incentives are very important to encourage employment in rural areas.⁽¹³⁾

In Indonesia, with the demographics of vendors very different from one another, it is very possible if a medical doctor counts to serve in the area. Financial incentives are the main motivation for students to work in rural areas. The Indonesian government must consider incentives for health workers (doctors) if they want the distribution of medical workers to work in rural areas. Goel in his study also believes that rural health workers need additional incentives.⁽¹⁴⁾

A qualitative study also made ram observations that work and career opportunities are another driving factor for students to work in rural areas. Young doctors are enthusiastic about career development after they work in rural areas.⁽¹⁵⁾ For this reason, researchers hope that there will be government policies in making decisions and recommendations for doctors who are willing to work in rural areas.

The curriculum that includes studies relating to rural areas provided by private universities seems to have influenced the tendency of private medical students to work in rural areas. Some studies concluded that the curriculum provided by rural institutions would provide a positive new perspective for working in rural areas.⁽¹⁶⁻¹⁷⁾ This is also in line with the results of a study from Nepal, which concluded that a good strategy in increasing the interest of medical students to work in rural areas was to include education and provide community-based matriculation in previous education.⁽¹⁸⁾

Accepting students from rural areas or who have a rural background is important. The impact of previous lives made them not surprised to have work in the village. Private universities are not so heavy as to direct students to shift work in rural areas because they are familiar with conditions in rural areas and this is an influential factor in leading private medical students to work in rural areas. A multi-university study reported that students from rural areas were ten times more likely to work in rural areas.⁽¹⁹⁾ Study said that several universities from small cities in rural areas had rural regional focus and graduates would be more interested in serving rural socialization.⁽²⁰⁾ Study showed that the importance of the reason for recruiting students at universities in determining they are interested in working in rural areas.⁽²¹⁾ Some studies said that strong intrinsic motivation because it has been exposed to the rural environment will affect the desire to work in the countryside so that the institution is expected to contribute to this desire.^(8,9) For this reason universities must prioritize the registration of students from rural areas so that these students will later do rural service.

The cultural attractions of rural communities and the geographical conditions of rural areas are factors that influence the interest of medical students to work in rural areas, the results of this study are similar to those of some studies that showed geographical conditions are one of the factors considered by students in choosing work locations, as well as financial and lifestyle benefits in choosing a career location. ^(8,16,22)

The proximity of the location to the spouse/partner's influence is one of the factors that can influence students' interest in working in rural areas. Survey of Ghanaian medical students reported that couples from rural areas tended to choose to work in rural areas.⁽⁹⁾ Some studies stated that having a partner in the village would make the student more interested in working in the countryside.^(17,23) Factors that significantly affect students from private universities in their decisions to work in rural areas include institutions located in rural areas and institutions that have mandatory duty obligations for students to work in rural areas.⁽²⁴⁾

The existence of government regulations relating to compulsory rural services is a very persuasive contributing factor that leaves no choice for students but to carry out rural service. The government should recommend a change in resource allocation in an effort to meet the requirements to better promote rural areas to medical students.⁽¹⁴⁾ Research has evaluated the impact of government policies in increasing the availability of health workers in rural areas.⁽²⁵⁾

This study noted significant differences in factors related to medical students from private universities with a tendency to work in rural areas. Public university medical students have factors that are significantly related to the tendency to work in rural areas.

This study noted, there were 7 factors that significantly correlated to the interest of students to work in rural areas in 446 respondent medical students from private universities. However, only 4 factors simultaneously affected the interest of medical students to work in rural areas. Likewise private universities have the acceptance requirements of students who have a background in rural areas, students who have visited the countryside, students who have families close to their assignments, students who have economic status are as modest and have government policies governing rural facilities and infrastructure and policies that guarantee the career of students after working in the countryside, will affect the tendency of students to intend to work in rural areas.

The information from this study can help governments and private universities formulate policies and strategies that can ensure rural medical services become efficient and reliable health care services. In this case, the research findings provide an overview of the factors that influence the interest of medical students to work in rural areas. The existence of factors and behavioral factors outside the behavioral aspects of human nature have been studied and documented in accordance with Lawrence Green's theory which is the basis of this research.

The results of multivariate logistic regression analysis in this study illustrate the internal factors of private medical students studied, factors of educational institutions and government participation factors which together have a dominant influence on the interest of private medical students to work in rural areas.

CONCLUSION

This study has revealed individual trends or patterns in the attitudes and inclinations of private university medical students respectively toward rural service. By using the patterns and variables of student admission, it is expected to increase the interest of private medical students working in rural areas, and the end can distribute doctors in Indonesia equally.

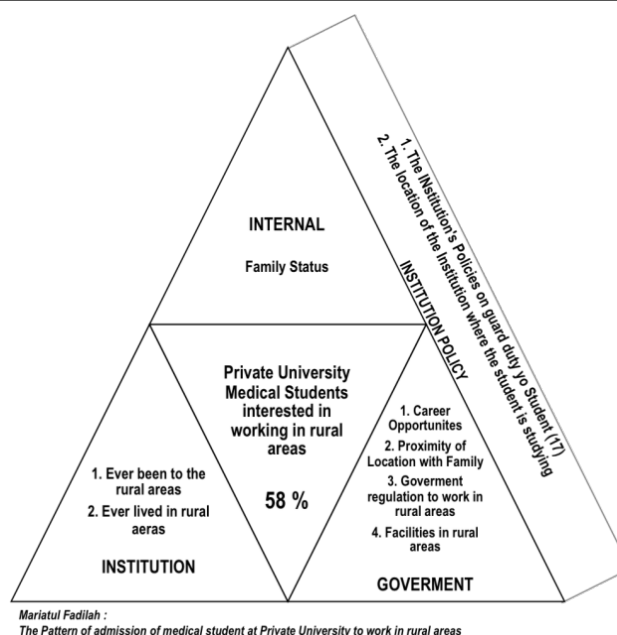


Figure 3.1. Pattern/model of acceptance for medical students from private universities based on the interest to work in rural areas in Indonesia

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