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Factors determining the demand for health insurance among the migrant workers

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ABSTRACT: *Background*: Over the preceding few years, the rate of individuals that have been living without health insurance has continued to increase exponentially. This paper the aim was on investigating the factors determining the demand for health insurance among migrants Botswana. *Methods:* A cross sectional study conducted between August 2013 to January 2014 in Gaborone and Francistown. Descriptive statistics and multivariate logistic regression analysis were used to describe the characteristics of the sample and to identify factors associated with participation in the health insurance. *Results*: The likelihood ratio chi-square of 42.09 with a p-value of 0.0000 indicated model as a whole fits significantly better than an empty model. We can say that for a one unit increase in employment category level, the odds in favour of owning insurance increases by a factor of 0.31. *Conclusions:* The results from the study revealed that gender of an individual was significant in determining the health insurance ownership among tuberculosis patients. A possible policy solution that would make health insurance compulsory would help to increase the demand for medical aid scheme.

KEYWORDS: Health insurance, migrant workers, Botswana.

1 INTRODUCTION

Over the past few years, the rate of patients that have been living without health insurance has continued to increase exponentially. The reasons why thousands of people across the country live without health insurance has been blamed on rising costs of insurance, higher levels of redundancy, and more proprietors cutting back on benefits offered to employees. Botswana's increase in private health care services has been partially associated to the development of medical aid schemes. These include public service, parastatals, as well as large and medium size companies. Most members of these schemes use private health care services than public health services, particularly for acute illnesses which are not treated in public health facilities [3]. Medical aid in Botswana started in the early 70's and this was optional to individuals who wanted to access high quality private care which was considered to be of a relatively higher quality compared to the public health care at the time.

The eight medical aid schemes in Botswana are: Botswana Medical Aid Society, Botlhe, Botswana Public Officers Medical Aid Scheme, Botsogo Health Plan, Itekanele, Doctors Aid, Pula Medical Aid and Audient Medical Aid. They have over 320 000 clients [4]. Some Medical Aid Scheme have membership restriction by occupation or income level while others are open to everyone who needs coverage. Public Health care services in Botswana are highly subsidized by government. An amount of Pula 5 (which is equivalent to $0.72) is required for outpatient visits to the health care service. Nonetheless, failure to produce this fee does not prevent one from obtaining the services. This high health-care subsidy has led to improvements in accessing and utilization of health-care services particularly in the primary health-care services [5].

Health insurance provides a mechanism for cost sharing. Therefore, when the demand for health insurance increases, we expect the public health expenditure to decrease. The high prevalence of HIV/AIDS draw resources away from other priority areas in which the country has achieved in the economic spheres. This therefore places the health system and the social fabric under considerable stress. For purpose of this study, the focus will be on investigating the factors determining the demand for health insurance among the migrants in Botswana.

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2 METHODS

2.1 STUDY SITE

A cross-sectional study with a quantitative approach was completed in Gaborone and Francistown between August 2013 and January 2014; these are the biggest cities with job opportunities.

2.2 SAMPLE SIZE

Sample size was calculated by using an estimation of population proportion formula: n = Z*Z[P(1-P)/(E*E)], where P = expected value = 12%, E = (expected frequency-worst acceptable) = 10%–8% = 2%, Z = 1.960 with a confidence level of 95%, n = 1.960*1.960[0.10(1–0.10)/(0.02*0.02)]. The final sample size was determined to be 431 after calculating that S = n/ [1+ (n/population)]. Only 400 were selected to be eligible as nine participants dropped out.

2.3 EXCLUSION AND INCLUSION CRITERIA

Respondents who were included in the study were migrant workers who were between 18 and 65 years of age. Only migrant workers were eligible.

2.4 DATA COLLECTION PROCEDURE

Due to the geographically scattered distribution of migrant workers, different working nature and working hours, and their free time, it was difficult to arrange data collection. Data were recruited in both daytime and after hours and in their residences and workplaces. Data collectors were fourth-year students at the University of Botswana with data collection experience.

2.5 GAIN ACCESS TO KEY PARTICIPANTS

A snowball sampling technique was used to find a specific number of participants per target group. Participants who suited the inclusion criteria were targeted and their informed consent was received prior to recruitment. Indeed, participants were able to identify and refer other potential respondents with similar characteristics, who were willing to discuss health insurance. The author's contact information was passed to migrant workers whom the researchers had already interviewed so that they could pass on to other potential participants.

2.6 STATISTICAL ANALYSIS

Descriptive statistics was analyzed as mean ± *SD*. In order to examine the associations between the sexual behavior, univariate logistic regression was used. A multiple logistic regression model with forward selection was used for potential confounding. The centrality level was at $p = 0.05$ or less. SPSS 21.0 was used to analyze the data.

2.7 ETHICAL CONSIDERATIONS

This study was approved by the Human Subjects Review Committee of the Institution of Social Medicine and Health Administration at Shandong Medical University. An ethical clearance letter was also obtained from the Research Review Committee of the Ministry of Health in Botswana. At the enrolment visit, eligible respondents were confirmed and signed informed consent obtained but immediately after data collection they were destroyed, as the study was regarded as dealing with sensitive issues in the local culture. This consent procedure was approved by the Ethical Committee of Shandong University and the Ministry of Health.

3 RESULTS

The descriptive statistics presented on Table 1 displays the mean, standard deviation, smallest and highest values of each of the variables under consideration. The descriptive statistics results show that on the average, 80 percent of the migrant workers indicated the ownership of Health Insurance policy while 20 percent don't have a Health Insurance policy. About 68

percent of the migrant workers were males and the majority of those interviewed were intermediate staff members of the various companies.

Table 1. Descriptive Statistic

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
ins_status	Insurance ownership	400	0.70039	0.447935	0	1
Ms1	married	400	0.36972	0.478225	0	1
gender	Male or female	400	1.388261	0.464466	1	2
dependants	No. of dependants	293	2.536941	2.108826	0	13
emp_cond	Category of employment	388	2.292779	0.899282	1	5
mh_income	Monthly income	388	5.236623	3.188997	1	11
visits	No. of visits to hospital	289	5.036902	4.462114	0	25
Alc_drink	Drinking alcohol	400	0.456971	0.488406	0	1
dur_exp	Duration of employment	233	10.44692	8.335553	3	30

Similarly, only 30 percent of the TB patients are married and 70 percent single. The Table also indications that on the average there are two defendants per respondents and this range from 0 to 13. The descriptive statistics displays that the average income of the TB patients is P5000.

3.1 EMPIRICAL RESULTS AND THE ECONOMIC INTERPRETATIONS

Table 2 gives the logit estimates of the odds of insurance ownership. The likelihood ratio chi-square of 42.09 with a p-value of 0.0000 tells us that our model as a whole fits significantly better than an empty model. However, this section discusses only the significant variables.

Table 2. Logit regression model results

Parameters	Odds Ratio	Std. Err.	z	P>z	95% Conf.	Interval
Ms1	2.26242	1.478892	1.37	0.204	0.6307279	8.765881
gender	2.844777	1.826605	1.44	0.098**	0.8172981	11.55547
dependents	1.083657	0.2476611	0.66	0.41	0.3391193	1.493899
Emp_cond	0.4146667	0.116644	-3.11	0.002*	0.1523330	0.7498963
Mh_income	1.383884	0.1226411	1.88	0.044*	1.0003745	1.996591
visits	0.9965735	0.0608944	-0.53	0.605	0.8550644	1.113785
Religion	3.365566	1.922913	1.88	0.062**	0.9803356	10.66290
Duration exp	0.8887135	0.031177	-0.33	0.025*	0.8496592	0.993966

Number of obs = 400	LR chi2(8) = 42.09
Log likelihood = -47.934026	Prob > chi2 = 0.0000
	Pseudo R2 = 0.3097

*NB * Significant at 95% confidence interval*
*** Significant at 90% confidence interval*

For a one unit increase in employment category level (emp_cond), the odds in favour of owning insurance (vs. not owning insurance) increases by a factor of 0.31.

4 DISCUSSION

The study indicated shocking results, gender of the migrant workers was found to be statistically significant at the 10 percent level. Being male migrant workers increases the odds of owning a health insurance by a factor of 2.84. The outcomes disagree with previous studies because most women play the decision-making role in their families' well-being. Their care

giving accountabilities and their own health needs may result in making women to have more contact with the health system [10]. On the average, more women are eligible for health insurance because of their lower average income and the greater likelihood of parenting infants and young offspring, therefore this brands women to request health insurance more than men and on average they use the health system more than men [11] but in this study it indicated that the majority of male migrants owed insurance than female migrant workers that's interesting.

Occupational status is significant and negatively influences the odds in favour of insurance ownership. Increasing the level of employment by a level decreases the odds in favour of insurance ownership by a 0.41. As we exchange from the lower category to the highest category we expect the likelihood of owning the health insurance to deterioration. This is because those in high positions of employment are more likely to join health insurance, as they may be offering more attention-grabbing packages. Preceding studies [12,13,14], verified that employment in the formal sector is an important determinant of owning health insurance policy, the result from the study didn't backings the findings of such numerous studies that have found income to significantly influence health insurance ownership. Most of the migrant workers were unemployment/self-employment but owned health insurance through Itekanele. Itekanele Health Scheme is a medical aid for low-income earners and it covers all members of the society including the jobless, retirees and students in Botswana.

Attentiveness results also show that the religion is significant and negatively influences the odds in favour of insurance possession. Increasing the occurrence of religion by one unit increases the odds of insurance ownership by a factor of 3.36. This advocates that those people who belong to a particular religion were more likely to acquire a health insurance. One paper shown that Catholic Church will encounter requests for medical procedures contrary to the moral teachings of the Religion. Catholic religion does not offend the rights of individual conscience by refusing to provide or permit medical procedures that are judged morally wrong by the teaching authority of the Church [15]. Religion has the advantage of empowering the individual through connecting him/her to a municipal, and to a superior potency, that might in turn give psychological stability [16].

Income is significant and positively influences the odds in favour of insurance possession. Increasing income by P1000 will escalation the odds of insurance ownership by a factor of 1.38. These outcomes therefore signify that patients demand for health insurance was influenced positively by their income level. The higher the income level of the patient, the greater the chances of acquiring health insurance. This is consistent with the findings of other studies [17, 18]. Other studies that have found income to have a very strong relationship with health insurance ownership [19, 20, 21]. Lastly number of dependents, age, number of visits to hospital, marital status, were not significant at 90 percent confidence interval. This may propose that they do not influence the insurance ownership in Botswana. This study had limitations that need to be highlighted. The data was collected from only two big cities in Botswana, and, therefore, the findings from this study are not generalizable to all the cities in Botswana.

5 CONCLUSION

The results from the study shown that the gender of an individual was significant in determining the health insurance ownership among the patients and religion. The results shows that men were more likely to own a health insurance than their female counterparts. This mainly because the family structure in Botswana assigns more social responsibility on the males. The study therefore recommends that the government come up with policies that will enable more men to demand health insurances. This can be done by charging low premiums for men as a result this can encourage more men to join as they make the household health decision.

COMPETING INTEREST

The authors declare that there is no conflict of interests.

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AUTHORS' CONTRIBUTION

The concept, data analysis and drafting of the manuscript were done by Lesego Selotlegeng. All authors contributed to reading and correcting the manuscript prior to submission.

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