Asia-Pacific Journal of Public Health
24(6) 953–960

DOI: 10.1177/1010539511409392
http://aph.sagepub.com

Equity of Access to Primary Care Among Older Adults in Incheon, South Korea

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Abstract

The present study examines the extent to which equity in the use of physician services for the elderly has been achieved in Incheon, Korea. It is based on the Aday and Andersen Access Framework. The results indicate that a universal health insurance system has not yielded a fully equitable distribution of services. The limitation of benefit coverage as well as high out-of-pocket payment can be a barrier to health care utilization, which results in inequity and differential medical care utilization between subgroups of older adults. Health policy reforms in South Korea must continue to concentrate on extending insurance coverage to the uninsured and establishing a financially separate insurance system for poor older adults. In addition, further research is needed to identify the nonfinancial barriers that persist for certain demographic subgroups, that is, those 80 years and older, men, those who lack a social network, and those who have no religion.

Keywords

equity of access, primary care, social network, older adults, universal health insurance

Introduction

One of the most recognized demographic trends in South Korea is that the population is growing increasingly older. South Korea is experiencing rapid population aging and will soon be confronted with depopulation and elderly population growth. South Korea entered a stage of aging society in 2000 with more than 7.2% of its population aged 65 years and older. Within less than 20 years (in 2018), South Korea is expected to become an aged society with its projected old age population more than 14%.[1] Incheon also entered a stage of aging society in 2002 with more than 8.3% of its population having become aged 65 years and older. As of 2020, its population aged 65 and older is estimated by the Korean Statistical office to reach 15.1%. Thus, Incheon will have become an aged society by 2020. An aging population, along with extended life expectancy, results in myriad public policy challenges that require the attention of policy makers and health care professionals.

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Studies have consistently indicated that population aging inevitably lead to an increasing demand for health care services.[2-5] With such an increasing demand for health care services because of aging, differences in access to care may arise from obstacles to the availability of health care services for the elderly. The policy issue is whether inequities in health care access persist under universal health insurance. A few studies[6,7] on the equity issues have been conducted. The study by Park[6] examined the extent to which equity in the utilization of 2 major sources of primary care, physician and pharmacist services, has been achieved in Korea since the system was fully implemented in 1989. A more recent study by Park[7] examined the social and behavioral determinants of long-term care utilization and the extent to which equity in the utilization of long-term care has been achieved. All these studies report that the South Korean health care system does not yield a fully equitable distribution of services.

To explore equity issues in the local communities, the present study used cross-sectional data from the 2003 Health Status Survey funded by Incheon city. The Aday and Andersen behavioral model was used to guide empirical and normative assessment of equity within the South Korean health care system. Two principal questions with respect to equity of access to physician services are addressed: (*a*) Which subgroups of the South Korean older adults are most likely to use physician services? (*b*) To what extent are the subgroup differences in utilization related to need?

This study examines the extent to which equity in the use of physician services for the elderly has been achieved. The specific aims are to (*a*) identify which demographic subgroups of older adults are most likely to have used physician services, (*b*) investigate the extent to which demographic subgroup differences in the use of physician services among older adults are related to differences in need, (*c*) examine the degree to which the availability of personal (eg, income) or health care resources (eg, insurance coverage) ameliorate subgroup differences in the use of physician services among older adults, and (*d*) evaluate the equity of access to care within the South Korean health care system under universal health insurance.

Methods

Conceptual Framework

The Aday and Andersen Access Framework[8] is used to guide the analyses (see Figure 1). In this framework, a series of predisposing, enabling, and need factors are hypothesized to be predictive of utilization of health care services. The predisposing component includes those variables that describe the "propensity" of individuals to use services. The enabling component describes the "means" individuals have available to them for the use of services. The need component refers to the illness level, which is the most immediate cause of health care utilization.[9]

Equity of access to health care is measured based on the relative importance of need compared with the other determinants of health services utilization. Access is equitable to the extent that predisposing, need-related demographic factors such as age and gender, as well as illness, account for health care utilization. Inequity is, however, suggested if services appear to be distributed on the enabling variables, rather than need.

The analyses will focus on subgroup differences in whether an individual used health care services in the 15 days preceding the interview, and a systematic series of multivariate (logistic regression) analyses examining the extent to which these differences are explained by equitable (need-related) or inequitable (non-need-related) factors.

Study Sample

This study is based on cross-sectional data from the 2003 Health Status Survey, which was conducted by Incheon city. All of the subjects (65 years and older) who resided in the sample

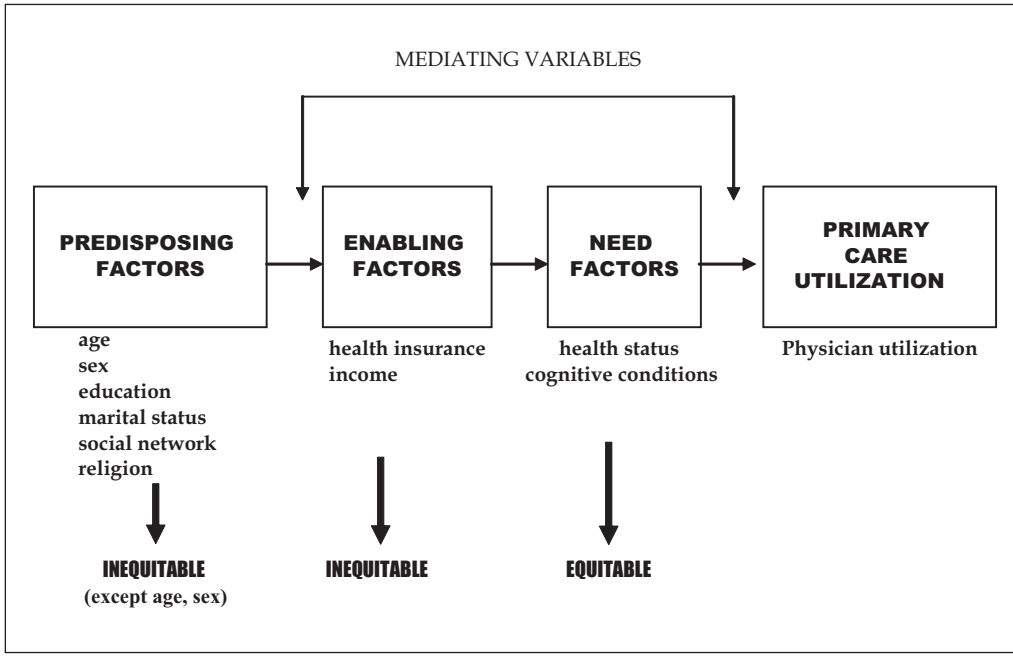

Figure 1. Conceptual framework for this study
Source: Aday et al.[8]

area of Dong-Ku were included in the survey, which was designed to obtain information about their health, demographic characteristics, and health services utilization. The sample consists of a total of 7001 respondents aged 65 years and older (including 410 cases with no response). Interviews were completed for 6591 individuals, that is, 94.1% of those identified as eligible on the basis of the basic health questionnaire.

Study Variables

The dependent variable (physician utilization) reflected whether the sample person was reported to have visited a physician during the 15 days preceding the interview. There was minimal missing information on all predisposing, enabling, and need variables corresponding to the Aday and Andersen model. There were 360 cases for which the data on age, education, social network, marital status, religion, health insurance, and health status were missing. Information on gender was missing in 362 cases (5%), income in 652 cases (9.9%), and cognitive condition in 644 cases (9.8% of the sample). For the logistic regression analyses, the independent variables were recoded to indicate dichotomies. The first category for a variable was coded 1 and the reference category for it (after "vs") was coded 0.

Analysis Plan

A series of bivariate analyses and associated χ^2 was performed examining the relationship between each of the predisposing, enabling, and need variables and health care services utilization. Logistic regression analysis was then used to examine the relative importance of factors found to be significant in the bivariate analyses in predicting whether or not a physician was seen in the 15 days preceding the interview.

To address the relative importance of the respective predisposing, enabling, and need factors as predictors of utilization, the analyses were conducted in a series of stages. The predisposing variables were entered in stage 1 to examine demographic subgroup differences. The need variables were entered in stage 2 to examine the extent to which the subgroup differences in stage 2 were reduced when variations in the need for care were controlled. At the final stage, the enabling factors were entered to examine whether the remaining subgroup differences were primarily because of the availability of personal or medical care resources (stage 3). The criteria that were used in evaluating the equity of the health care system were (*a*) if the addition of the need variables results in the shift of the odds ratios for the stage 1 variables from significant to nonsignificant, then the differences between groups defined by these predisposing factors may be deemed equitable; (*b*) similarly, if the original magnitude and significance of the odds ratio is reduced when the need variables are added, then this suggests that need may account for some of the differences observed earlier; and (*c*) evidence for the remaining inequities in the system are reflected in the remaining statistically significant odds ratios for the predisposing (other than age and gender) and enabling variables after the inclusion of the need measures (see Figure 1).

The statistical significance of the odds ratios (the ratio of the likelihood that one age group, eg, 80 or more years, has access compared with another age group, eg, 65-79 years) is examined to evaluate the impact of the predisposing, enabling, and need factors at each stage. Change in the magnitude or significance of the odds ratios in the successive stage is used to identify those factors which help to account for the subgroup differences in the probability of seeing a physician.

The $-2 \times$ (log likelihood) test, based on the χ^2 distribution, was used to test the maximum likelihood fit of the model, that is, the extent to which the probabilities of occurrences predicted by the model were an accurate representation of the actual occurrences (such as whether or not health care was used).

Results

Bivariate Analysis

Those who were most likely to have visited a doctor (*a*) were 65 to 79 years old, (*b*) were women, (*c*) were religious, (*d*) were married, (*e*) had 1 or more years of schooling, (*f*) had a social network, (*g*) had no personal income, either as individuals or as a couple, (*h*) had insurance coverage, (*i*) had poor or fair health status, and (*j*) had no evident cognitive condition (Table 1).

In the initial stage of the analyses, all the variables, such as age, gender, religion, marital status, education, social network, income, insurance coverage, self-perceived health status, and cognitive condition remained significant predictors of physician utilization.

The significance level of 10% was used in this study to determine which independent variables would be included in the multiple logistic analysis. The multivariate phase of the analysis follows.

Multivariate Analysis

The odds ratios for health care utilization, simultaneously adjusted for multiple independent variables, are presented in Table 2. After adjusting for an array of predisposing factors (stage 1), those who were most likely to have been to a doctor included older persons (especially those who were 65-79 years old), women, those who have one or more network members, and those who were religious.

Table 1. Percentage of Those Who Had Physician Visits in the Past 15 Days by Each Study Variable (N = 6591)

Study Variables	Physician Visit	
	Percentage	χ^2
Age (years)		5.0[a]
80+	9.3	
65-79	44.5	
Gender		43.8[b]
Female	34.8	
Male	19.0	
Education		3.5[c]
No schooling years	16.2	
1 or more years	37.6	
Marital status		8.9[b]
Married	27.0	
Others	26.8	
Social network members		3.8[c]
1 or more	50.8	
None	3.0	
Religion		18.5[b]
Yes	35.8	
No	18.0	
Personal income of individuals or couple		5.7[a]
No	42.8	
Yes	10.6	
Health insurance		3.7[c]
Yes	52.1	
No	1.7	
Self-perceived health status		460.7[b]
Poor/fair	41.9	
Good/excellent	11.9	
Cognitive condition		6.8[c]
Yes	8.3	
No	45.6	

[a] $P < .05$.
[b] $P < .01$.
[c] $P < .10$.

These relationships were reexamined, adjusting for need (stage 2). The elderly with poor or fair health status were more than 3 times more likely to have visited a doctor than those with good or excellent health status. Those who had no evident cognitive condition were more likely to have been to a doctor than persons who had cognitive conditions.

The need variables had no effect on the odds ratios of physician utilization for the predisposing variables entered in stage 2. The demographic subgroup differences remained about the same in stage 2. Need factors such as health status and cognitive condition were important determinants of physician utilization among older adults.

The impact of the enabling factors was examined in stage 3. None of the resource variables were statistically related to the use of physician services after controlling for the other factors.

Table 2. Multivariate Logistic Regression Analysis of Predictors of Seeing a Doctor in Past 15 Days for Older Adults

	Seeing a Doctor					
	Stage I		Stage II		Stage III	
Determinants	Odds Ratio	*P*	Odds Ratio	*P*	Odds Ratio	*P*
Predisposing						
Age (years)						
80+ vs 65-79	0.84	<.05	0.82	<.01	0.82	<.01
Gender						
Female vs male	1.37	<.01	1.22	<.01	1.22	<.01
Education						
No schooling years vs 1 or more	1.00	.93	0.90	.16	0.90	.16
Marital status						
Married vs others	1.03	.57	1.02	.81	1.02	.73
Social network members						
1 or more vs none	1.21	.07	1.33	<.05	1.28	<.05
Religion						
Yes vs no	1.21	<.01	1.24	<.01	1.26	<.01
Need						
Self-perceived health status						
Poor/fair vs good/excellent			3.44	<.01	3.54	<.01
Cognitive condition						
Yes vs no			0.82	<.05	0.82	<.05
Enabling						
Income						
No vs yes					1.08	.25
Health insurance						
Yes vs no					1.03	.85
Model χ^2	66.6		514.97		506.6	
Degrees of freedom	6		8		10	
Significance	<.0001		<.0001		<.0001	

Adjusting for the resource variables such as insurance coverage and income did not have an impact on the odds ratios of physician utilization for the predisposing and need factors. The remaining subgroup differences were generally not reduced once the resource variables were taken into account.

In sum, having personal or medical care resources such as income and insurance did not ameliorate the remaining subgroup differences in the use of physician services among the elderly, as observed in stage 3. Income and insurance coverage remain nonsignificant independent determinants of physician utilization.

The χ^2-based test for assessing how well the models fit the data was significant, that is, $P < .0001$ (Table 2).

The preceding analyses bore out that South Koreans' health status and need variables were important predictors of whether or not older adults had visited a doctor. Subgroup differences were not explained by need variables. Predisposing factors such as age, gender, social network,

and religion had a statistically significant impact on the odds ratios of physician utilization for subgroups of older adults. The remaining subgroup differences were not narrowed by resource variables, even after need is taken into account. Therefore, the South Korean health care system can be judged to be inequitable with respect to access to physician services.

Discussion

This study examined the extent to which equity in the utilization of physician services has been achieved in Incheon, South Korea, based on the Aday and Andersen Access Framework that takes into consideration a series of variables hypothesized as predictive of utilization. Unlike other utilization models, the Aday and Andersen model is appropriate for understanding differential levels of access among policy-relevant subgroups and suggesting ways to achieve equity among them. The model coincides best with the specific aims of this study. Therefore, the Aday and Andersen Access Framework was used to guide empirical and normative assessment of equity within the South Korean health care system.

The results of this study indicate that certain subgroups, that is, those 80 years and older, men, those without any social network members, and those who have no religion, are least likely to have been to a doctor, irrespective of need, insurance coverage, and income. Thus, either nonfinancial policy options or modifications of the existing financing system may be required to improve access to care for these groups.

As expected, health status and need were important determinants of physician utilization among older adults. Differences in need did not generally account for the original differences observed between demographic subgroups. The personal and medical care resources did not account for the remaining subgroup differences in the use of physician services among older adults. In addition, personal and medical resources such as having insurance coverage and income were not important independent predictors of access.

An underlying expectation under the current health insurance system is that the health care system would be equitable. The research reported here did not support this expectation. If equity is considered intrinsically important for the South Korean health care system, expansion of insurance coverage should be the priority of policy. The important policy options for expansion of coverage are (*a*) to limit the range of noninsured services, mainly new technology and (*b*) to decrease the financial burden of out-of-pocket payments on patients by abolishing the special treatment charges and by replacing the current flat rate.[10] The limitation of benefit coverage as well as high out-of-pocket payment can be a barrier to health care utilization, which results in inequity and differential health care utilization between subgroups of older adults.

The data suggest that approximately 3% of the elderly remain uninsured. The main reasons cited by the uninsured for not being covered are retirement or unemployment, delays in paying the premium, migration or moves that resulted in loss of coverage, or decisions to drop the coverage because of high premium cost.[11] The attention of policy makers and health care professionals is therefore required.

Other health insurance schemes need to be considered for poor older adults. To ease the burden of the aging of the population on health insurance, the government introduced a new social insurance scheme for long-term care in 2008, separate from health insurance. The current long-term care insurance still has certain limits in improving access to care for poor older persons. Thus, a financially separate insurance system for poor older adults is needed.

These findings are subject to the limitations of secondary data. One of the limitations relates to the use of cross-sectional rather than longitudinal data. A second limitation is that the 2003 Health Status Survey did not collect data that were based on the Aday and Andersen model. Therefore, the present analysis could not include additional constructs, such as beliefs about

health services and health policies. To clearly understand the causal associations within a conceptual model, future studies should consider longitudinal designs and also encourage the collection of data that are driven by a conceptual framework.

In conclusion, this study has suggested that health policy reforms in South Korea must continue to concentrate on extending insurance coverage to the uninsured and establishing a financially separate insurance system for poor older adults. In addition, further research is needed to identify the nonfinancial barriers that persist for certain demographic subgroups, that is, those 80 years and older, men, those lacking social network members, and those who have no religion.

Acknowledgments

I thank Dr Pansun Park for her assistance in data collection. Pacific Edit reviewed the manuscript prior to submission.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the University of Incheon Research Grant in 2010.

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