A Path Analysis Examining the Relationship Between Access Barriers to Health Services and Healthcare Utilization Among the Publicly Insured: Insights from a Multiprovince Survey in the Philippines

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Abstract:

Background: Although the National Health Insurance Act (NHIA) of 2013 has been widely successful in expanding coverage, insurance alone may not translate into access to quality healthcare for everyone. Even among the insured, substantial barriers to accessing services inhibit health care utilization.

Objectives: This study was focused on examining the influence of selected health services access barriers to the healthcare utilization among the publicly insured residents in the Philippines.

Methodology: A cross-sectional survey was conducted with a sample of 7,234 Filipino residents chosen using multi-stage cluster sampling. Path analysis was used to determine the connections among the study variables.

Results: Descriptive analysis revealed that the respondents always perceive approachability and ability to reach as supply-side and demand-side access barriers, respectively, among others. Correlation analysis revealed that supply-side and demand-side access barriers to care and the healthcare utilization of the respondents are positively interrelated from each other, suggesting that respondents who always perceive the mentioned factors as access barrier to care utilize low level of healthcare services for the past three months. A further path analysis was conducted and revealed that the supply-side determinant with the largest total causal effect on healthcare utilization is approachability while the demand-side determinant with the largest total causal effect is ability to reach. The findings showed better fit of the conceptual model in predicting healthcare utilization. Approximately 93% of the variance in the healthcare utilization is explained by the model.

Implications: The results of the study may enable policy makers and health planners to identify the different dimensions and aspects of barriers to access to health services, and to devise specific interventions or combination of interventions that can best address these barriers.

Keywords: Access, Barriers, Demand-Side Access Barriers*, Disparities, Healthcare, Insurance, Path Analysis, Philippines, Supply-Side Access Barriers**, Utilization

*Ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage

**Approachability, acceptability, availability and accommodation, affordability and appropriateness

INTRODUCTION

Policy efforts to improve access to healthcare have focused primarily on expanding health insurance coverage. The National Health Insurance Act (NHIA) of 2013 seeks to improve health care quality and increase access to health insurance by expanding free medical care coverage. As a result of its implementation, 97 million of the country's expected 104 million population have been covered by healthcare insurance at the end of 2017 (Crisostomo, 2018). Although the NHIA has been widely successful in expanding coverage, insurance alone may not translate into access to quality healthcare for everyone.

One of the main components of access to care is insurance coverage. However, even among the insured, several authors proved that substantial barriers to accessing healthcare services exist (Devoe et al., 2007; Richard et al., 2016). For instance, long waiting times, low levels of trust in medical professionals, and work or family obligations have all been identified to inhibit healthcare access (Han, Call, Pintor, Alarcon-Espinoza, & Simon, 2015; Kullgren, McLaughlin, Mitra, & Armstrong, 2012). Those at greater risk for facing these barriers to access include those members of ethnic minority groups, with low incomes, persons in poor health, and surprisingly, those with public insurance (Carrillo et al., 2011; Devoe et al., 2007).

Further, many doctor's offices or clinics do not accept medical care insurance payment, thus the beneficiaries are challenged in finding accessible primary care (Han et al., 2015). There has been a decline of insurance acceptance rate among other countries which significantly pose a barrier to access to health services (Bishop, Press, Keyhani, & Pincus, 2014). Insurance beneficiaries often report experiences of discrimination based on their insurance, including provider-patient interactions that felt demeaning (Maldonado, Hall, Bryant, Jenkins, & Elliott, 2012). Importantly, people who report experiencing this form of insurance-based discrimination are less likely to receive preventive health services (Allen, Wright, Harding, & Broffman, 2014).

In Southeast Asia, numerous barriers continue to hamper access to needed healthcare services especially in low-income countries (Jacobs, Ir, Bigdeli, Annear, & Damme, 2012). In Laos, the complex billing system of hospitals, as well as poor interpersonal skills and unwelcoming attitude of the hospital staff, were identified as barriers to access of health services (Paphassarang, Philavong, Boupfa, & Blas, 2002). On the other hand, the lack of trust by the patients in Cambodia on healthcare providers makes the public reluctant to use the healthcare services (Ozawa, & Walker, 2009).

In the Philippines, the experiences of the beneficiaries as a result of the medical insurance expansion may be informative for the rest of the country. Although access did improve, approximately 60% to 80% of Filipino adults were reported of not using the health insurance due to confusion about coverage, poor knowledge with the healthcare system, and other access barriers (BSP, 2015).

Analysis of data used for this study found that publicly insured populations experience widespread barriers to getting needed health care (Jacobs et al., 2012). However, the researcher does not ascertain whether the magnitude of the perceived problem matters in accessing care. Levesque, Harris, and Russell (2013) and Jacobs et al. (2012) suggest that a wide range of supply-side and demand-side determinants may contribute to disparities in care. To effectively reduce health care inequities, it is important to better understand the contribution of healthcare provider and seeker characteristics on the quality of care for minorities.

This study fills knowledge gaps surrounding barriers to care among a diverse sample of publicly insured adults in the Philippines. In this paper, the researcher examined the extent to which low-income, ethnically diverse adults enrolled in public health care programs report selected barriers to accessing health care. The effect of the magnitude of these barriers on healthcare utilization in terms of outpatient, inpatient and emergency care services, was further examined. Understanding the experience of this population in accessing health care may inform targeted interventions aimed to ensure that expanded coverage translates to greater access to care.

LITERATURE REVIEW

Related Literature

More recently, a number of authors have emphasized the importance of access in receiving healthcare services, as well as the barriers impeding the access.

Amzat and Razum (2018) argued that access simply means to have the opportunity to use or benefit from something. But when it comes to access to health, they contended that it is complex and multidimensional. It requires rigorous conceptualization, and in practical terms, it requires a lot of efforts and policies. It can be argued that creating access to health is the singular greatest problem confronting all nations in terms of healthcare. All major issues (including health system, rationing in healthcare, rights to healthcare and healthcare financing) center on access to health. Fitzpatrick (2013) argued that improved access to medical care has been a major goal of much health legislation and planning and efforts to conceptualize and measure access have varied.

Andersen, McCutcheon, Aday, Chiu, and Bell (1983) proposed two approaches to assessing access to health: (1) via population characteristics (denoted by family income, insurance coverage, attitudes toward medical care) and (2) via system characteristics (denoted by overall healthcare system, distribution and organization of manpower and facilities). In this regard, factors enabling or hindering demands for healthcare are twofold: obstacles affecting supply, and population characteristics. Considering this perspective, Levesque et al. (2013) defined an individual's access to health as the opportunity to identify healthcare needs, to seek healthcare services, to reach, obtain or use healthcare services, and to actually have a need for services fulfilled. This individual-level approach focuses on the ability to observe health needs and to seek healthcare services. Therefore, the ease with which an individual in need of health services is able to obtain them is called access to health.

In a similar vein, access to health is defined as the ability to use a service or approach a provider or an institution; thus defined as the opportunity or ease with which consumers or communities are able to use appropriate services in proportion to their needs such as opportunities to use healthcare facilities and obtain quality care without constraints. Therefore, factors to consider include supply-side features of health systems and organizations, demand-side features of populations, and other process factors that could serve as influencers. It is in line with the foregoing that Levesque et al. (2013) identified five dimensions of access to health and five abilities on the demand side. On the health system (supply) side, the dimensions include: approachability, acceptability, availability, affordability and appropriateness. On the population (demand) side, there are five corresponding abilities that interact with the dimensions of accessibility to generate access: ability to perceive, ability to seek, ability to reach, ability to pay, and ability to engage.

To the National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, Board on Health Care Services, Committee on Health Care Utilization and Adults with Disabilities (2018), access to healthcare is defined as having timely use of personal health services to achieve the best possible health outcome. Access requires gaining entry into the healthcare system, getting access to sites of care where patients can receive needed services, and finding providers who meet the needs of patients and with whom patients can develop relationships based on mutual communication and trust. It is argued that clinicians note that timely access to healthcare is important inasmuch as it might enable patients and physicians to prevent illness, control acute episodes, or manage chronic conditions, any of which could avoid exacerbation or complication of health conditions.

Rosoff (2016) contended that people cannot access care if it does not exist in their geographic area, or if providers will not treat them because of insurance or other issues. Rural areas in particular have been identified as lacking a sufficiently supply of specialty physicians and in particular, mental healthcare providers. Assuming that services are available, access to care might be impeded by other barriers. One is inadequate transportation, either because travel time is excessive, because no public transportation is available and the person does not have a car or other alternative transportation, or because the cost of transportation is prohibitive. Providers might refuse to see patients because no appointment times are open, or because

they do not accept patients' insurance. Providers might be unable to communicate with patients because of language issues, or their offices might not be accessible to people with disabilities. Excessive wait times to obtain appointments or to see providers at their places of service might also deter use.

Davis and Ballreich (2014) stated that access to healthcare is tied to the affordability of health insurance. Financial barriers to care, particularly among low-income people and the uninsured, have been greater in the United States than in other high-income countries. The Kaiser Commission on Medicaid and the Uninsured notes that people who lack insurance coverage have worse access than people who are uninsured, and 20 percent of uninsured adults in 2015 went without needed medical care because of cost. The lack of health insurance has been identified as an important driver of health-care disparities. On the contrary, they also argued that having insurance coverage does not mean that coverage is inadequate or is not associated with burdensome cost-sharing through premium payments, payments and deductibles. Surveys have categorized underinsured people as those who say they have insurance but are worried about medical bills, who are paying them off over time, who have obtained selected types of healthcare services because of cost.

Yih (2016) argued that utilization of healthcare services reflects a need for care, but stated that this is not the case for several reasons. He contended that many factors affect healthcare utilization independently of need and are reflected in differences, some of which are remediable, among population groups. Some of these factors are related to biologic or environmental differences among groups, such as disproportionate residence in polluted environments, access to healthful food and adequate housing, and education associated with effective use of healthcare. Others are related to differences in access, such as health insurance coverage or income needed to obtain services, ease of obtaining services, and discriminatory practices of providers.

Related Studies

Various studies have been reported investigating the barriers to access healthcare services. For instance, a study conducted by Devoe et al. (2007) found out that there are three major barriers to access of healthcare and these are lack of insurance coverage, poor access to services, and unaffordable costs. The study revealed that a higher percentage of uninsured parents (87%) reported experiencing difficulties obtaining insurance coverage compared with 40% of those with insurance. Few of the uninsured expressed concerns about access to services or health care costs (19%). Access concerns were the most common among publicly insured families, and costs were more often mentioned by families with private insurance. It also showed that families made a clear distinction between insurance and access, and having one or both elements did not assure care. The analyses also uncovered a three-part typology of barriers to health care for low-income families. The study finally concluded that barriers to health care can be insurmountable for low-income families, even those with insurance coverage. Patients who do not seek care in a family medicine clinic are not necessarily getting their care elsewhere.

A study conducted by Allen et al. (2014) examined the effect of selected barriers to healthcare access and the magnitude of those barriers on healthcare utilization. Multivariate logistic regression was used to estimate the effects of perceived patient, provider, and system-level barriers on past year delayed, foregone, and lack of preventive care. Reporting problems across all barriers increased the odds of delayed care from two times for provider-related barriers to more than six times for access barriers and foregone care from 2.6 times for family/work barriers to more than seven times for access barriers. Perceived discrimination was the only barrier consistently associated with all three utilization outcomes. The study further concluded that multiple types of barriers are associated with delayed and foregone care and system-level barriers and discrimination have the greatest effect on healthcare seeking behavior.

Kullgren et al. (2012) identified the prevalences and predictors of nonfinancial barriers that lead to unmet need or delayed care among U.S. adults. In the study, reasons for unmet need or delayed care in the previous 12 months were assigned to one of five dimensions in the Penchansky and Thomas model of access to care. Prevalences of barriers in each nonfinancial dimension were estimated for all adults and for adults with affordability barriers.

Multivariable logistic regression models were used to estimate associations between individual, household, and insurance characteristics and barriers in each access dimension. The study found out that 18 percent of U.S. adults experienced affordability barriers and 21 percent experienced nonfinancial barriers that led to unmet need or delayed care. Two-thirds of adults with affordability barriers also reported nonfinancial barriers. Young adults, women, individuals with lower incomes, parents, and persons with at least one chronic illness had higher adjusted prevalences of nonfinancial barriers. The study further concluded that nonfinancial barriers are common reasons for unmet need or delayed care among U.S. adults and frequently coincide with affordability barriers. Failure to address nonfinancial barriers may limit the impact of policies that seek to expand access by improving the affordability of health care.

In their study, Subirats et al. (2014) analyzed the barriers to access along the care trajectory in Brazil and Colombia. They compared factors that influence access in its broad domain in two municipalities of each country, by means of a cross-sectional study based on a survey of a multistage probability sample of people who had had at least one health problem within the last three months. The results revealed important barriers to healthcare access in both samples, with notable differences between and within countries, once differences in sociodemographic characteristics and health needs are accounted for. In the Colombian study areas, the greatest barriers were encountered in initial access to healthcare and in resolving the problem, and similarly when entering the health service in the Brazilian study areas. Differences can also be detected in the use of services: in Colombia greater geographical and economic barriers and the need for authorization from insurers are more relevant, whereas in Brazil, it is the limited availability of health centres, doctors and drugs that leads to longer waiting times. There are also differences according to enrolment status and insurance scheme in Colombia, and between areas in Brazil. The barriers appear to be related to the Colombian system's segmented, non-universal nature, and to the involvement of insurance companies, and to chronic underfunding of the public system in Brazil.

Uchimura (2007) analyzed people's financial barriers to access healthcare services based on the structure of the health financing system and recent experience in the Philippines. It suggested that functions in the health financing system in particular payment schemes, have a powerful influence on the behavior of all actors in health systems and this determines who bears the financial risks and financial burdens of access to health services. In the Philippines, the current payment schemes appear to cause moral hazard to providers, and give a strong impetus to increasing health expenditures. In addition, providers may capture insurance benefits as rent, and this may critically impede reduction in the financial burdens of the poor.

OBJECTIVES OF THE STUDY

This study aims to examine the effect of selected health services access barriers to the healthcare utilization among the publicly insured residents in the Philippines. Specifically, it attempted to: (1) determine the level of perceived barriers to healthcare and healthcare utilization among the respondents; and (2) determine the association between each barrier domain and healthcare utilization of the respondents.

THEORETICAL FRAMEWORK

This study substantially depends on the Theory of Access originally developed by Penchansky and Thomas (1981). This theory defined access as the degree of fit between the user and the service; the better the fit, the better the access. The authors claimed that access is optimized by accounting for each of the following dimensions: approachability; acceptability; availability; affordability; and appropriateness. Approachability relates to the fact that people facing health needs can actually identify that some form of services exists, can be reached, and have an impact on the health of the individual. Services can make themselves more or less known among various social or geographical population groups.

Another dimension is acceptability which relates to cultural and social factors determining the possibility for people to accept the aspects of the service (e.g. the sex or social group of providers, the beliefs associated to systems of medicine) and the judged appropriateness for the persons to seek care. The third dimension, availability and accommodation refer to the fact that health services (either the physical space or those working in health care roles) can

be reached both physically and in a timely manner. The next dimension, affordability reflects the economic capacity for people to spend resources and time to use appropriate services. The last dimension, appropriateness denotes the fit between services and clients need, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment and the technical and interpersonal quality of the services provided.

Furthermore, the proponents of this theory argued that the dimensions of access are independent yet interconnected and each is important to assess the achievement of access. They maintained that access is central to health services and that these dimensions cannot be separated from it.

This inquiry also relies on the theoretical framework proposed Levesque et al. (2013). The framework showed that barriers to accessing health services can stem from the demand side and/or the supply side. Demand-side determinants are factors influencing the ability to use health services at individual, household or community level, while supply-side determinants are aspects inherent to the health system that hinder service uptake by individuals, households or the community. Furthermore, they argued that the need to differentiate demand-side from supply-side barriers is related to the formulation of appropriate interventions. The supply-side determinants are the dimensions taken from Penchansky and Thomas (1981) while the demand-side determinants are formulated from perception of need through to the outcomes of service use. The demand-side determinants include ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage.

It is argued that the notion of ability to perceive need for care among populations is crucial and determined by such factors such as health literacy, knowledge about health and beliefs related to health and sickness. The next determinant, ability to seek health care, relates to the concepts of personal autonomy and capacity to choose to seek care, knowledge about health care options and individual rights that would determine expressing the intention to obtain health care. The next determinant, ability to reach health care relates to the notion of personal mobility and availability of transportation, occupational flexibility, and knowledge about health services that would enable one person to physically reach service providers.

The fourth determinant, ability to pay for health care is a widely used concept within the health services and health economics literature. It describes the capacity to generate economic resources - through income, savings, borrowing or loans - to pay for health care services without catastrophic expenditure of resources required for basic necessities (e.g. sale of home). Poverty, social isolation, or indebtedness would be examples of factors restricting the capacity of people to pay for needed care. The last determinant, ability to engage in health care would relate to the participation and involvement of the client in decision-making and treatment decisions, which is in turn strongly determined by capacity and motivation to participate in care and commit to its completion. This dimension is strongly related to the capacity to communicate as well as notions of health literacy, self-efficacy and self-management in addition to the importance of receiving care that is actually appropriate for the person, given its resources and skills.

CONCEPTUAL FRAMEWORK

Figure 1 shows the schematic diagram employed in the study. The exogenous variables are the access barriers of the respondents to care in terms of supply-side and demand-side determinants. The supply-side determinants are the elements related to the healthcare provider namely, approachability, acceptability, availability and accommodation, affordability and appropriateness. The demand-side determinants are the elements related to the healthcare seeker namely, ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage. The endogenous variable is the utilization of healthcare in terms of outpatient, inpatient and emergency care services. It is assumed that access to care is significantly dependent on the healthcare utilization.

Figure 1. Schematic Diagram Employed in the Study

METHODOLOGY

Research Design

A cross-sectional survey design was used for this quantitative research study investigating the access barriers to care and healthcare utilization among the publicly insured residents of Davao City. Specifically, this study utilized questionnaires with the intent of generalizing from a sample to a population. In addition to surveys, a correlational research design was used to determine if there is a relationship between the variables and the degree of that relationship (Mitchell & Jolley, 2012). In this study, the correlational design assessed the relationship between the access barriers to care and the healthcare utilization.

Sources of Data

This study utilized primary sources of data. The primary data of this study were taken from the responses to a survey questionnaire. Rossi, Wright, and Anderson (2013) defined a survey questionnaire as a tool composed of series of questions designed to elicit information, which is filled in by all participants in the sample.

Sampling Technique

The researcher used multi-stage cluster sampling in the conduct of the study employing the regions of the Philippines to which the respondents reside as the clusters in the first stage, provinces as the clusters in the second stage. Thompson (2012) states that cluster

sampling is a probability sampling technique used when mutually homogeneous yet internally heterogeneous groupings are evident in a statistical population. In this technique, the total population is divided into clusters and a simple random sample of the groups is selected using computer-assisted randomizer application. In the third stage, a sampling frame was provided by the local government unit. A power analysis using G*Power 3.1 was used to determine the sample size needed to attain a minimum power of 0.80. Using the power analysis, a total of 7,864 Filipino citizens with public insurance were recruited as respondents in the study. Of the 7,864 identified, only 7,234 were sampled because the 630 citizens did not visit any medical facility for the past three months due to excellent self-reported health status.

Data Gathering Instrument

The study employed survey questionnaires to elicit data based on the objectives. The survey questionnaire is composed of two (2) parts. The first part sought to determine the perception of the respondents on the supply-side access barriers to care, namely the approachability, acceptability, availability and accommodation, affordability and appropriateness, as well as the respondents' perception on the demand-side access barriers to care, namely, the ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage. The 30 items in the first part of the questionnaire were based on the conceptual model proposed by Levesque et al. (2013) and Jacobs et al. (2012) with additional considerations from various literatures. The items were measured on a five-point Likert scale ranging from 1 (never) to 5 (always). To account for the internal consistency of the instrument, the questionnaire's Cronbach's alpha coefficient was measured by conducting a pilot test. The individual Cronbach's alphas were as follows: supply-side access barriers ($\alpha = 0.92$) and demand-side access barriers ($\alpha = 0.94$). The mean value of each item in the questionnaire was interpreted based on the following scale:

Range of Means	Category	Interpretation
4.20 - 5.00	Very High	The respondents never perceive the mentioned factor as access barrier to care.
3.40 - 4.19	High	The respondents rarely perceive the mentioned factor as access barrier to care.
2.60 - 3.39	Moderate	The respondents sometimes perceive the mentioned factor as access barrier to care.
1.80 - 2.59	Low	The respondents very often perceive the mentioned factor as access barrier to care.
1.00 - 1.79	Very Low	The respondents always perceive the mentioned factor as access barrier to care.

The second part of the questionnaire sought to determine the utilization of the respondents to the outpatient, inpatient and emergency healthcare services of the government for the past three months. The utilization was based on the number of healthcare visits for the past three months.

Procedure of the Study

A letter of permission to conduct the study was given to the Mayors of the selected local government units. After securing the approval, the questionnaires were administered on the respondents. Written informed consent was obtained from the respondents. Included in the written informed consent are the direct benefits of the respondents from the study, and associated risks. Respondents were fully informed that the responses from the questionnaire will be utilized solely for the results of the study. Furthermore, the respondents were given the autonomy to answer the questions in the survey questionnaires. After retrieving the questionnaires, the responses were tabulated, analyzed and interpreted using the appropriate statistical tools.

Statistical Treatment

In analyzing and interpreting the data gathered for this study, the following statistical tools were employed:

1. Mean was used to determine the perception of the respondents on the supply-side and demand-side access barriers to care and to know the number of respondents who utilize the healthcare services;
2. Pearson-r correlation was used to determine the relationship between supply-side, demand-side access barriers to care and the healthcare utilization of the respondents.
3. Path analysis was used to determine if the supply-side and demand-side access barriers to care affect the healthcare utilization of the respondents. To assess the model fit, the following indices and criteria were used: Chi-square of Minimum Discrepancy Test, CFI > 0.95, GFI > 0.95, NFI > 0.95, and RMSEA < 0.05. The level of statistical significance was set at $P < 0.05$.

RESULTS AND DISCUSSION

Table 1 presents the mean and descriptive equivalent of the study variables. All of the supply-side access barriers obtained a descriptive equivalent of very low suggesting that respondents always perceive the mentioned factors as access barrier to care. Affordability obtained the highest mean score ($M=1.59$), followed by acceptability ($M=1.54$), appropriateness ($M=1.53$), availability and accommodation ($M=1.37$), and approachability ($M=1.34$). Meanwhile, all of the demand-side access barriers obtained a descriptive equivalent of very low implying that respondents always perceive the mentioned factors as access barrier to care. Ability to pay obtained the highest mean score ($M=1.78$), followed by ability to seek ($M=1.74$), ability to engage ($M=1.67$), ability to perceive ($M=1.57$), and ability to reach ($M=1.56$). Mean healthcare utilization as measured by the total number of healthcare visits for the past three months was 4.23 implying that an average publicly insured Filipino who reported illness seeks healthcare services approximately four times for the past three months.

Table 1. Mean and descriptive equivalent of study variables

Variables	Mean	Descriptive Equivalent
Supply-Side Access Barriers		
Approachability	1.34	Very Low
Acceptability	1.54	Very Low
Availability and Accommodation	1.37	Very Low
Affordability	1.59	Very Low
Appropriateness	1.53	Very Low
Demand-Side Access Barriers		
Ability to Perceive	1.57	Very Low
Ability to Seek	1.74	Very Low
Ability to Reach	1.56	Very Low
Ability to Pay	1.78	Very Low
Ability to Engage	1.67	Very Low
Healthcare Utilization	4.23	

Table 2 shows the correlations among supply-side, demand-side access barriers to care and the healthcare utilization of the respondents. All of the correlation values were significant ($p < 0.05$). In particular, approachability is positively related to acceptability, availability and accommodation, affordability, appropriateness, ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage, and healthcare utilization. Acceptability is positively related to availability and accommodation, affordability, appropriateness, ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage, and healthcare utilization. Availability and accommodation are positively related to affordability, appropriateness, ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage, and healthcare utilization. Affordability is positively related to appropriateness, ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage, and healthcare utilization. Appropriateness is positively related to ability to perceive, ability to seek, ability to reach, ability to pay,

ability to engage, and healthcare utilization. Ability to perceive is positively related to ability to seek, ability to reach, ability to pay, ability to engage, and healthcare utilization. Ability to seek is positively related to ability to reach, ability to pay, ability to engage, and healthcare utilization. Ability to reach is positively related to ability to pay, ability to engage, and healthcare utilization. Ability to pay is positively related to ability to engage and healthcare utilization. Finally, ability to engage is positively related to healthcare utilization.

Table 2. Zero-order correlations among the study variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Approachability	-	.84	.88	.92	.81	.84	.79	.95	.97	.75	.89
2. Acceptability		-	.82	.85	.80	.78	.87	.76	.90	.95	.63
3. Availability and Accommodation			-	.81	.96	.75	.78	.97	.75	.86	.84
4. Affordability				-	.87	.97	.97	.78	.90	.91	.54
5. Appropriateness					-	.92	.83	.95	.95	.87	.56
6. Ability to Perceive						-	.84	.83	.80	.88	.67
7. Ability to Seek							-	.86	.88	.75	.56
8. Ability to Reach								-	.95	.82	.83
9. Ability to Pay									-	.96	.49
10. Ability to Engage										-	.76
11. Healthcare Utilization											-

A path analysis was conducted to determine the causal effects among supply-side, demand-side access barriers to care and the healthcare utilization. The conceptual model, presented in Figure 1, was consistent with the empirical data. More specifically, all path coefficients are significant at the .05 level. The significant paths are as follows: healthcare utilization path in the supply-side access barriers namely, approachability, acceptability, availability and accommodation, affordability and appropriateness and demand-side access barriers namely, ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage.

The hypothesized conceptual model with path coefficients was generated and is now presented in Figure 2. The model fits well with the following indexes: Chi-square of Minimum Discrepancy Test (56.23), $p < 0.000$; CFI = 0.976; GFI = 0.958; NFI = 0.951; RMSEA = 0.036.

The outcome of primary interest was healthcare utilization: the supply-side determinant with the largest total causal effect is approachability (.86), followed by availability and accommodation (.81), acceptability (.58), appropriateness (.51), and affordability (.47). The demand-side determinant with the largest total causal effect is ability to reach (.79), followed by ability to engage (.67), ability to perceive (.57), ability to seek (.51), and ability to pay (.35). It can be gleaned that all of the supply-side and demand-side determinants exerted a positive influence on healthcare utilization. Approximately 93% of the variance in the healthcare utilization is explained by the model.

Figure 2. Path Diagram of the Conceptual Model

DISCUSSION

This study was focused on examining the influence of selected health services access barriers to the healthcare utilization among the publicly insured residents in the Philippines. In an attempt to answer the objective, two specific aims were laid. First, the study aimed to determine the level of perceived barriers to healthcare and healthcare utilization among the respondents; and to determine the influence of each barrier domain on healthcare utilization of the respondents.

In the descriptive analysis, the study reported that the respondents always perceive approachability and ability to reach as supply-side and demand-side access barriers, respectively, among others. These barriers obtained the lowest mean score suggesting that the healthcare professionals were less approachable during the respondents' healthcare visit for the past three months. Meanwhile, the respondents noted that they had low level of ability to reach implying that there seems to be a problem with the factors that would enable one person to physically reach healthcare service providers such as personal mobility and availability of transportation, occupational flexibility, and knowledge about health services.

Correlation analysis revealed that supply-side and demand-side access barriers to care and the healthcare utilization of the respondents are positively interrelated from each other, suggesting that respondents who always perceive the mentioned factors as access barrier to care utilize low level of healthcare services for the past three months. A further path analysis was conducted and revealed that the supply-side determinant with the largest total causal effect on healthcare utilization is approachability while the demand-side determinant with the largest total causal effect is ability to reach. This indicates that the public insured Filipinos who viewed healthcare professionals as less approachable and who had problems related to physically reaching healthcare service providers, had low level of utilization of healthcare services.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This study only included the residents of the Philippines who are covered by the National Health Insurance Program of the government and enrolled in the system for at least one (1) year as of the conduct of study. This study was limited to analyzing the causal relationship between the implications for their perceptions on the access barriers to care and healthcare utilization.

This study focused on the access barriers to care and its influence to healthcare utilization. The barriers included were adopted from the previous studies. Only five barriers in the supply-side and demand-side while only three services were identified as the variables in the framework. There are many other barriers and services catered by the hospital and selecting only five barriers and three services is a limitation.

Another limitation of the study is that, this study was a cross-sectional study, the data were collected only for a given period of time. Also, the data were collected only using a standard questionnaire. Because the data about the barriers related to access of care can be collected through observation and interviews, the method of collecting data is a limitation.

Despite the limitations, the study is significant to various government organizations and health stakeholders. Considering patients' needs and expectations in the process of healthcare delivery improves the quality of services. The results of this study would be beneficial to the healthcare seekers, especially the most marginalized group in the Philippines, as the demand-side barriers to accessing care were clearly identified and possible interventions to these barriers may be proposed.

Not only the end-users of care may be benefited in this study but also the healthcare providers as findings of the study may improve healthcare delivery to the patients. Acquiring the perceptions of the publicly insured may provide insights to the providers which include giving the utmost respect and confidentiality during the health delivery process. In addition, the supply-side barriers to accessing care were clearly known and possible solutions to these barriers may be proposed.

The findings may also benefit the hospital administrators and the local government units of the Philippines as this study would add data to the implementation of National Health Insurance Act in the local layer of the State. Through the data obtained from the study as perceived by the respondents, the government may revisit the practices and guidelines of the law.

The results of the study may enable policy makers and health planners to identify the different dimensions and aspects of barriers to access to health services, and to devise specific interventions or combination of interventions that can best address these barriers. Conversely, the findings can assist in assessing the appropriateness of existing interventions as a means to address the identified access barriers. Finally, this study could serve as reference for related studies in the future.

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