HOUSEHOLD PREFERENCES FOR PUBLIC AND PRIVATE HEALTHCARE: INSIGHTS FROM A SURVEY IN KHYBER PAKHTUNKHWA

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Original Article

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Abstract

The coexisting of public and private health care provision implies that the two systems are not perfect substitutes. Previous research from developed countries has pointed out discernable differences, both between the two health care systems and amongst the people utilizing these. Developing countries' evidence, however, is either missing or lacking. This study therefore examines relative preferences for public and private health care systems in Khyber Pakhtunkhwa. A data set, comprising of 76 respondents/patients, is collected through a structured questionnaire. The descriptive analysis of the data set revealed that households prefer economy and qualified medical staff of the public health care system. They however revealed that the most unattractive features of the public health care include absenteeism of staff, prescription of low-quality medicines, and uncleanliness of the hospitals. On the other hand, private health care is preferred because there is no discrimination, and it is generally believed that the system will never compromise on quality tomaintain goodwill. It is however perceived that private sector is profit driven and characterized by over-prescription of medicines/treatment. The regression analysis of the data set revealed that education and positive last impression lead to more healthcare demand but distance from the healthcare facility reduces it. Having more male household members and dependents tilted preferences in favor of public health care while being married is associated with a preference for private health care.

Keywords: Health Care, Preferences, Public and Private, Survey Results

1. Introduction

Health care plays a pivotal role in ascertaining the quality of the human capital of a nation. Sound health improves the productivity and efficiency of human capital and results in economic growth and development. Health services refer to the promotion, maintenance, and restoration of health. It generally includes public and private sector hospitals, and clinics/laboratories/pharmacies operated by individuals and shopkeepers. Besides hospitals operated at federal, provincial and district levels, public sector health care provision in Pakistan includes malaria control program, lady health worker program, tuberculosis, and HIV/AIDS control program, the expanded program on immunization, national maternal and child health program, cancer treatment program, program for prevention and control of hepatitis A & B, and food and nutrition program (Akram & Khan, 2007). Private health care, on the other hand, includes all providers outside the public sector whose aim is to treat illness or prevent disease. In practice, considerable overlap between the two sub-sectors exists, as most private practitioners are also full-time employees in public health care.

Owing to the arguments of market failure and equity, health care in most countries is predominantly provided by the government sector. Given that health care provision entails a

positive externality, it is argued that the services will be undersupplied if left to the market (Akram & Khan, 2007). And since health care services are expensive, in the absence of public sector provision, only the wealthy will enjoy the services. Consequently, obtaining expensive health care services from the market will cause many households to fall below the poverty line. Table 1 shows data on average out-of-pocket per capita expenditure on health as a percent of per capita income (APCHEi) and per capita total consumption (APCHEt) in Khyber Pakhtunkhwa. Given that these averages ranges from 5 to 10 percent, leaving health care entirely in private hands may indeed have devastating impacts on the livelihoods of the public.

Table 1 Household's Out-of-Pocket Health Expenditure in Khyber Pakhtunkhwa

	Urban		Rural	
Division	APCHEi	APCHEt	APCHEi	APCHEt
Malakand	4.44	4.28	7.26	5.96
Hazara	6.24	5.04	8.43	6.73
Mardan	8.89	7.71	10.69	7.50
Peshawar	5.81	5.49	8.55	7.44
Kohat	6.77	6.52	11.65	9.78
Bannu	2.43	3.54	5.32	5.72
D.I.Khan	2.34	2.82	4.70	5.20
Average	5.275	5.057	8.086	6.904

Source: Authors calculations based on HIES (2018-19)

The opponents of public health care provision, however, recognize that government provision invariably imply a lower than the market-determined price. In turn, this will lead to moral hazard and subsequent overconsumption of the health care services (Van Ackere, 1995). Besides, increasing expectations and recent healthcare pandemics have posed major challenges to public healthcare provision (Bvuchete et al., 2020). Increasing pressure on the public health care provision, improvements in the socioeconomic status of the masses and in the quality of private health care provision (Pallegedara & Grimm, 2017), have caused people to shift towards private health care (Baru et al., 2010). It is argued that private health care, besides public health care, provides an alternative to the consumers and may improve quality by encouraging healthy competition. Further, it may also ease the pressure on the public exchequer, especially in developing countries (Preker et al., 2000). But the opponents of the private healthcare system argue that the system is very expensive and may cause chronic poverty in less developed countries (see Mhlanga & Garidzirai, 2020; and Cahaya, 2022 for more details). As is evident from table 1, whereby households in Khyber Pakhtunkhwa spend 5 to 8 percent of their per capita income on health care, any increase in the healthcare expenditure may indeed have catastrophic effects.

Empirical evidence from the rest of the world shows that the two systems can co-exist side-by-side. There are however features of the two systems which are liked/disliked by the patients. For instance, rural and poor households usually prefer public healthcare but hate the long waiting times, absence and unfriendly behavior of the medical staff in public health care (Baru et al., 2010; Mhlanga & Garidzirai, 2020). On the other hand, private healthcare providers are admired for quality, brief waiting times, and friendly behavior of the staff but are disapproved because of its profit orientation, over-prescriptions of medicines and tests, and poorly trained staff (Rannan-Eliya & Sikurajapathy, 2008; Pallegedara & Grimm, 2017). In developing countries' context, this is not a question of "this one or that one", but how the two systems can benefit from adopting the preferred characteristics of the other system and getting rid of those characteristics that are disliked by the public. This requires an analysis of the public versus private healthcare provision in the local context, and an understanding of the indicators that are preferred by patients in the two alternative systems. Beside predominantly dealing with the supply side (i.e., provision of new facilities for example), most of the previous research pertains to the developed world (Gaddah et

al., 2015; Pallegedara & Grimm, 2017), having little applications for improving the demand side in less developed countries. Hence, this study is designed to investigate the characteristics of the two healthcare systems that are admired by the public in the local context.

2. Literature review

Generally, demand for health services is influenced by many factors, ranging from socioeconomic and demographic characteristics such as age,sex, income, tastes and preferences, and the level of awareness (Pallegedara & Grimm, 2017), to structural features of the health care system such as availability, price/cost, financing methods, and attitudes of the health care professionals (Levesque et al., 2013). A summary of the recent empirical literature is given in table 2 below.

Table 2 Empirical Findings from Previous Research

Outcomes	Predictor(s)	Relationship	Studies
Healthcare Expenditure	Income	Positive	Murthy & Okunade, 2009; Ogundari & Abdulai, 2014
		Positive [public],Negative [private]	Anyanwu, 2007; Gaddah et al., 2015
		Positive [private & public]	Ahmed & Mahran, 2009; Lotfi et al., 2017
Healthcare Demand	Price/Cost	Negative [public],Positive [private]	Ahmed & Mahran, 2009; Gaddah et al., 2015
	Waiting Time	Positive [private],Negative [public]	Anyanwu, 2007; Ahmed & Mahran, 2009
	Qualification (Healthcare Professionals)	Positive [public],Negative [private]	Ahmed & Mahran, 2009
	Household size	Positive	Ogundari & Abdulai, 2014
		Negative	Gaddah et al., 2015; Lotfi et al., 2017
	Education	Positive	Ahmed & Mahran, 2009; Ogundari & Abdulai, 2014; Gaddah et al., 2015
	Age		Ogundari & Abdulai, 2014; Lotfi et al., 2017
	Number of Children		Ogundari & Abdulai, 2014
	Female Household Head		Ogundari & Abdulai, 2014; Lotfi et al., 2017
	Quality		Ahmed & Mahran, 2009; Rannan-Eliya et al., 2015a, 2015b
	Health insurance		Gaddah et al., 2015
	Duration of Illness		

Source: Literature Review by the Authors

Age is one of the demographic factors that is associated with health care demand. Theoretically, young people are likely to have lesser demand for healthcare than older people, since health status is directly related to the demand for health care (Rehnberg, 2020). Empirical studies however report mixed results. For instance, while Zhang et al. (2018) reported that demand for [public] health care is negatively related to age (also see Gaddah et al., 2015 and Park & Hong, 2020), Rehnberg (2020) found no relationship between age and health care demand. Household size and households having more children both contribute positively to households' demand for health care (Ogundari & Abdulai, 2014; Pallegedara & Grimm, 2017). Female-headed households, on the other hand, demand less health care as compared to male-headed households (Gaddah et al., 2015).

Healthcare services are not freely available, even if provided by the public sector. Obtaining these services involves paying the direct cost in the shape of a fee/price, and indirect costs involve the opportunity cost of forgone income (Levesque et al., 2013). There is ample research showing that price and healthcare demand are inversely related (see, for instance, Akin et al., 1995 and Amaghionyeodiwe, 2008, except Pallegedara & Grimm, 2017, to whom demand for health care is price insensitive). The opportunity cost of the demand for healthcare is usually proxied by distance to the health care facility, transportation cost, and waiting time and are found inversely related to health care demand (Eme Ichoku & Leibbrandt, 2003; Ahmed & Mahran, 2009; Vanden Boom et al., 2010). It follows that income should have a positive impact on healthcare demand (Ogundari & Abdulai, 2014; Gaddah et al., 2015; Mhlanga & Garidzirai, 2020). Likewise, education also contributes positively to the demand for healthcare (Levesque et al., 2013). Quality considerations and the attitude of healthcare professionals also have important consequences on the demand for healthcare (Jacobs et al., 2012; Gaddah et al., 2015).

Generally, if the two systems are identical in the above-stated characteristics, then the public would be indifferent between the two alternatives. But as stated by Pallegedara and Grimm (2017), people using private healthcare despite the availability of public healthcare implies that either the two systems are differentiated or that the private sector offers better quality than the public sector. Empirical research has investigated this question and has found some notable differences. For instance, income and general healthcare demand are positively correlated but research has found that increasing income tilt household preferences from public healthcare to private healthcare provision (Chakraborty et al., 2013; Gaddah et al., 2015; Pallegedara & Grimm, 2017; Mhlanga & Garidzirai, 2020). Other variables that directly affect income and indirectly private healthcare demand are the education of the household head and having more adult members in the household (Pallegedara & Grimm, 2017). According to Rannan-Eliya et al. (2015b), the shift from public to private health care because of increasing income may be due to non-clinical factors such as cleanliness, friendly behavior of the medical staff, and consultation time.

The price/cost considerations also exert different effects on the demand for public and private health care. Mwabu et al. (2003) estimated the magnitude of price elasticity of demand to be very different for public and private healthcare, with private being more price sensitive than public (also see Gaddah et al., 2015 and Pallegedara & Grimm, 2017). Likewise, absenteeism and non-flexible hours discourage demand for public health care provision(Jacobs et al., 2012) but being a rural household increases demand for public health care (Chakraborty et al., 2013).

3. Data and Methodology

This study is based on a survey conducted by the students of Malakand University to assess the relative quality of public and private health providers. The total sample comprised 76 respondents/patients conveniently selected from clinics and hospitals in Chakdara and Batkhela. The male students collected data and hence, owing to the culture of the area, the entire sample consists of male respondents only. Out of the total sample, 68 respondents were married while 6 respondents were unmarried. 22 of the respondents lived in joint families while the rest belonged to nuclear families. The mean age of the respondents is 41 years while the mean education is

approximately 12 years. The mean household size of the sample is 6.55 and the mean income is Rs. 46763 per month.

Variables and measures used in this study, along- with descriptive statistics, are outlined in table 3 below. Most of the measures are candid except those used to operationalize the three satisfaction scales. For instance, the "Visit Satisfaction Scale (VSS)" measure the level of satisfaction the respondents experienced during their last visit to the doctor. VSS is measured with 10 indicators[1], all concerning the recommended clinical protocols. Responses are recorded as yes (when a particular clinical protocol was followed during the visit) or no (when a particular clinical protocol was not followed during the visit). Adding responses to these questions resulted in the VSS measure.

Likewise, Satisfaction with Government Health Care Provision (SGHCP) is measured with 16 items[2] and responses are again binary coded. Satisfaction with Private Health Care Provision (SPHCP) is measured with 11 statements, 6 of which were positive (e.g., private doctors do not compromise quality to maintain goodwill) and 5 negative statements (e.g., private doctors are expensive). In all three scales, higher numbers will imply greater satisfaction and vice versa.

Following Gaddah et al. (2015), satisfaction with the j^{th} type of healthcare is modeled as a function of the quality of the health care alternative. The two alternative health care systems may differ in terms of cost (both direct and opportunity cost) and quality, and the i^{th} individual will choose the one providing him the greatest satisfaction. In the regression context, the satisfaction level of the i^{th} individual from the j^{th} health care system can be modeled as follows.

$$SL_{i,j} = \beta_0 + \sum_{i=1}^{n} \sum_{k=1}^{K} \beta_{i,k} X_{i,k} + \varepsilon_i \qquad (1)$$

In the above specification, SL_{ij} is the j^{th} satisfaction type of the i^{th} respondent. X_{ik} is a vector of k explanatory variables and β_{ik} are the corresponding slope parameters to be estimated. The X_{ik}vector includes demographic variables such as age, education, income, family size and composition, and hospital or treatment-related variables such as distance from private and/or government healthcare facility, time, and monetary expenditure during the last consultation with the doctor and VSS. Initially, the entire X vector is considered a candidate for explaining variations in satisfaction from government and private healthcare provision. However, redundant variables are step wise eliminated, using the backward selection criteria.

4. Results and Discussion

As previously stated, there is considerable overlapping between the two systems of healthcare provisions. Naturally, there must be characteristics common in both systems that consumers are likely to prefer. Therefore, we first compare the satisfaction level of consumers on indicators common to both systems. Subsequently, preferences of consumers foreither publicorprivate sectors are discussed.

[1]The 10 statements related to history taking, physical examination, laboratory test recommendations, nutritional advice, privacy during the consultation, prescriptions, and provision of medicine, availability of para-medical staff, and hygiene of the clinical settings.

[2]These statements are related to the quality of services received and the behavior of the doctors and paramedical staff at the government healthcare facility. Responses to 7 of the statements, such as over-prescription of medicines and uncleanliness, are however reverse coded for scale construction.

Table 3 Descriptive Statistics of the Variables and Measures

Variables	Min	Max	Mean	Std. Dev.	Skewness
Age (Years)	22	61	41.05	10.864	-0.012
Education (Years)	0	16	11.63	5.384	-1.467
Monthly Income (Rs.)	10000	100000	46763.16	32181.17	0.545
Distance from private health center (km)	0.1	15	4.068	3.8825	1.068
Distance from private health center (km)	0.3	13	3.253	2.7381	1.556
Male female ratio	0	5	1.82154	1.288149	1.142
Number of Dependents	0	8	1.82	1.726	1.252
Time Spent with the doctor (mins)	3	45	14.4595	9.41754	1.577
Expenditure on last consultation (Rs.)	140	13000	1697.143	3115.087	2.349
Family Size	0	26	6.55	4.288	2.447
Visit satisfaction scale	0	9	7.42	2.099	-2.035
Satisfaction with Govt. Health Care	0	9	6.58	2.44	-0.647
Satisfaction with private health care	0	11	5.97	1.993	-0.108

Source: Authors calculations

Table 4 contains results on indicators that cause patients to prefer or refuse a particular type of health care service. While distance seems to be irrelevant in the case of government health care provision, it seems to be a relevant parameter for selection of private health care provision. The perceptions of effectiveness, on the other hand, influence preferences of patients equally for the two types of health care provision. Similarly, and as opposed to private health care centers, it is perceived that doctors and other staff do not treat patients equally and are less friendly at public healthcare centers. Therefore, patients valuing equality and friendly behavior are more likely to prefer private healthcare providers over the public sector. On the other hand, cost-conscious patients are likely to prefer public healthcare provision over private as most of the respondents consider private health care provision expensive. Over-prescription of medicine is considered an issue common in both types, but respondents perceive it to be more pronounced in private health clinics.

Table 4 Preferences of Patients for Public/Private Health Care (Common Indicators)

Preferred/refused Because of:	Public Sector		Private Sector	
	Yes (%)	No (%)	Yes (%)	No (%)
Nearest available in the Area	50	50	89.2	10.8
Most Effective Service Available in the Area	70.3	29.7	67.6	32.4
Doctors & Other Staff Treats Patients with Equality	40.5	59.5	89.2	10.8
Doctors & other Staff is Friendly	56.8	43.2	91.9	8.1
The service is Less Costly	83.3	16.7	10.8	89.2
The Doctor Over Prescribe Medicine	68.4	31.6	84.2	15.8

Source: Authors calculations

Table 5 presents results on preferences of patience for public health care. Majority of the respondents (91.1%) think that public health care staff is qualified and skilled, and 89.2% of the respondents believe that laboratory tests in the public sector are economical. Furthermore, 97.4% of respondents opted for public healthcare over private becauseof specialized treatment but 84.2% responded that absenteeism is a major issue in public health care system. Moreover, 60.5% of respondents considered consulting a medical physician in the public sector more time-consuming while 73.7% responded in affirmative to nepotism and unequal treatment at the public health sector. An overwhelming 97.4% of the respondents characterized public sector hospitals as unclean, and 73.7% ofthe respondents reported that the only reason for consulting public health care is the non-availability of qualified private doctor in the area.

Table 5 Preferences of Patients for Public Health care

Prefer/Refuse Public Health Centers because:	Yes (%)	No (%)
Qualified Para Medical Staff	91.7	8.3
Para Medics & Doctors under the same roof	44.4	55.6
Less Costly Laboratory Tests	89.2	10.8
Specialized Treatment	97.4	2.6
Absence of Doctors	84.2	15.8
Waiting Time	60.5	39.5
Nepotism	73.7	26.3
Prescribe Low Quality Medicine	89.5	10.5
Public Health Centers are unhygienic	97.4	2.6
Non-Availability of Private Doctors	73.7	26.3

Source: Authors calculations

Table 6 presents the results of patients' preferences towards the private sector. A significant number of respondents (91.9%) believe that private sector does not compromise on quality. Majority of the respondent think that private doctors are qualified but are profit and self-interest motivated.

Table 6 Preferences of Patients for Private Health care

Prefer/Refuse Private Health Centers because:	Yes (%)	No (%)
Private Doctors will not Compromise on Quality	91.9	8.1
Private Doctors are unqualified	5.3	94.7
Private Doctors are Profit Motivated	78.9	21.1
Private Doctors are Self-Interested	76.3	23.7

Source: Authors calculations

Table 7 below contains the results of two variants of equation (1) estimated as Generalized Least Squares (GLS)[3]. In the first specification, SGHCP is taken as a dependent variable while SPHCP is dependent in the second specification. The list of explanatory variables is the same in both specifications. In the results, however, only those variables are retained that significantly explain variation in two of the satisfaction scales. The values of Tolerance (Tol) and Variance Inflating Factors (VIF) imply that there is no singularity or near singularity issue in the explanatory

[3] In cross-sectional data, the problem of variable variance is customarily encountered, rendering inferences invalid. To take care of this problem, both equations are estimated as GLS specifications.

variables. Besides, the adjusted R-square values (i.e., 0.545 and 0.335 respectively) and the significant F-statistics imply that both the models fit the data well.

Education of the household head is positively and significantly correlated with a preference for both public and private healthcare provision. The coefficient is, however, only significant at the 10 percent level in case of public health care provision while that of private health provision is significant at 1 percent. Moreover, the magnitude of both unstandardized (i.e., 0.117 > 0.077) and standardized coefficients (i.e., 0.304 > 0.161) reveals that more education increases the likelihood of preferring private health care provision. Distance from the private health center, as one would expect, positively influences preferences for public health services and negatively for private health services. Likewise, distance from public health centers influences preference for public health care provision negatively but has no influence on preference for private health care provision.

Table 7 Predictors of Preferences for Public and Private Health care (GLS Results)

Variables	Public Sector			Private Sector		
	Coefficient	Collinearity		Coefficient	Collinearity	
		Tol	VIF		Tol	VIF
Intercept	-0.317	---	---	0.454	---	---
Education of the Household Head	0.077***	0.872	1.147	0.117*	0.934	1.07
Distance from private health center	0.393*	0.305	3.282	-0.196**	0.92	1.087
Distance from public health center	-0.416*	0.325	3.075	---	---	---
Male female ratio	0.4**	0.771	1.297	---	---	---
Number of Dependents	0.278**	0.873	1.146	---	---	---
Visit Satisfaction Scale	0.675*	0.815	1.227	0.403*	0.892	1.121
Marital Status of the household head	---	---	---	1.907**	0.921	1.086
Adjusted R-Square	0.545			0.335		
F-Statistics	14.401*			9.419*		

Source: Authors calculations, ** p<.01, ** p<.05, *** p<.1*

The household composition also influences preferences for the two types of healthcare provision. Our results reveal that families having more male members (i.e., a greater male-to-female ratio)

are likely to opt for public health care provision. Likewise, an increase in the number of dependent family members (family members below the age of 15 and above the age of 65 years) also influence preferences of the households in favor of government health care provision. Marital status, on the other hand, influence preferences only for private health care provision. Specifically, married people are more likely to opt for private healthcare provisions than single people. Visit satisfaction scale, on the other hand, influence both preferences for public and private health care provision, but the influence seems to be larger for public health care.

5. Conclusion

The realization of health services as a public good has historically caused national governments to provide universal health care under their own umbrella. But demand for all public services, including health, is soaring with every passing day. Several countries around the world have therefore very rightly encouraged the private sector to assist in delivering health services. Early findings from other countries have shown that the two systems are distinct and hence knowing the preferences of the masses concerning the two healthcare systems is important for devising a suitable public policy. Owing to the dearth of research on the topic in Pakistan, this study therefore aimed to assess the relative quality of public and private health sectors in Khyber Pakhtunkhwa, Pakistan. The descriptive analysis of the data set revealed that respondents preferred private health care because of the friendly behavior of the doctors and other staff. They also revealed that private health care is characterized by equality in dealings and that private healthcare practitioners never compromise on quality to maintain their goodwill and customer base. Respondents, however, disliked private healthcare for being profit motivated and characterized by over-prescription of medicines and treatment. With respect to public healthcare, the respondents revealed that it is cost-effective and operated by qualified medical doctors and para-medical staff. They, however, disapproved of the absenteeism of medical staff, prescription of low-quality medicines, and uncleanliness of hospitals in the public sector.

The regression results revealed that education tends to increase the overall healthcare demand, as the coefficient was positive and significant for both public and private healthcare. The magnitude is however greater for private healthcare, implying that more educated people tend to enjoy private healthcare. Distance from a given type of health care facility was found to negatively influence preference for that type of health care but the cross-substitution effect is visible only incase of public healthcare. That is distance from a private healthcare facility negatively influenced preferences for private healthcare and induced respondents to seek public healthcare. But distance from public healthcare, while influencing preferences for public health negatively, has no effect on preferences for private healthcare. The satisfaction experienced by the respondents from a particular type of healthcare influenced preferences for that type positively, both in the case of private and public health care.

Amongst the demographic characteristics of the sample households, having more male members in the household induced them to rate public health care high on their preference scale. Likewise, having more dependents in the household also tilted preferences in favor of the public sector. Marital status, on the other hand, is found to positively associate with a preference for private healthcare.

These findings have important policy implications for managers of both private and public healthcare systems. The managers of public healthcare can adopt the characteristics of friendly behavior and equality in dealings from the private sector. They can also focus on eliminating absenteeism from the system and making hospitals cleaner. Likewise, the private sector could

focus on changing the perceptions of the public who thinks of theprivate healthcare as detached from social motives and is only profit motivated.

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