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Determinants of treatment-seeking behaviour and healthcare provider choice in Afghanistan in 2018: a cross-sectional study

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ABSTRACT

Introduction In Afghanistan, remarkable achievements have been made in improving access to healthcare and health outcomes since the introduction of essential healthcare packages. Nonetheless, sociodemographic and geographical inequities persist, and out-of-pocket expenditures are high. This study investigates the client and provider determinants of access to care that affect treatment-seeking behaviour in 2018.

Methods Secondary data analysis using data on treatment-seeking behaviour in public and private healthcare from the Afghanistan Health Survey 2018 was combined with data on the quality of public healthcare facilities from a national healthcare facility assessment of the same year. Logistic regression analyses were performed to explore associations between client characteristics and accessibility of public healthcare facilities, and treatment-seeking behaviour and choice of public versus private healthcare provider.

Results The results suggest that the odds of seeking treatment are lowest among the rural poor. The odds of treatment-seeking and choosing a public healthcare provider are higher for pregnancy-related health needs but lower for chronic conditions. Affordability of healthcare was associated with lower odds of treatment-seeking (OR 0.96, 95% CI 0.95 to 0.98) and using private healthcare providers (OR 0.97, 95% CI 0.96 to 0.99). Increased satisfaction with opening hours (OR 1.04, 95% CI 1.02 to 1.05) and availability of a female nurse or doctor (OR 1.03, 95% CI 1.01 to 1.04) in public health facilities, and a higher level of trust in healthcare provider (OR 1.04, 95% CI 1.03 to 1.06) were associated with higher odds of using public healthcare.

Conclusion Afghanistan's public healthcare system is vital in providing care to the economically disadvantaged and managing infectious diseases and maternal health problems. The private sector plays a dominant role, particularly for those illnesses not covered under the essential healthcare packages. The study suggests opportunities for the public healthcare system to alleviate financial barriers to healthcare access and broaden its service offerings to encompass the management of chronic illnesses.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ In Afghanistan, access to healthcare services varies considerably and out-of-pocket expenditures are high, in part due to a dominant private sector.
⇒ A better understanding of treatment-seeking behaviour and the role that accessibility of public healthcare plays in shaping this is needed to design policies that effectively address the equity gap and promote universal health coverage.

WHAT THIS STUDY ADDS

⇒ Treatment-seeking is lower among the rural poor.
⇒ Nonetheless, most people, independent of socio-economic status, use private healthcare providers.
⇒ The use of public healthcare facilities is higher among people with lower socio-economic status and people with a maternal or gastrointestinal health need, whereas people suffering from chronic conditions are more likely to use private healthcare.
⇒ Treatment-seeking and use of private healthcare were associated with measures of affordability, acceptability and accessibility of (public) healthcare.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The results of this imply that Afghanistan's public healthcare system is an important source of care but too limited in scope to effectively address inequities in access to healthcare and remove financial barriers.
⇒ There is a need to expand the scope of the public healthcare packages to include management of chronic diseases.
⇒ Further research is needed to gain a better understanding of treatment-seeking behaviour and geographic differences through a combination of quantitative and qualitative research methods.

INTRODUCTION

In Afghanistan, access to affordable healthcare services varies significantly depending on geography, sex and socio-economic

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status. Afghans face many barriers to accessing healthcare services, including geographical challenges, lack of infrastructure, persistent conflict and insecurity and poverty.[1] These same barriers complicate effective healthcare delivery; public healthcare facilities often lack the essential equipment, medicines and human resources to provide quality healthcare.[2] The low availability of female healthcare workers is of particular concern, as they are essential in providing healthcare services to women due to cultural sensitivities.[3]

Public healthcare services in Afghanistan are largely donor-funded and are implemented by non-governmental organisations (NGOs) at the provincial level.[4] In 2001, after decades of civil war, the health system was in a dire state. Less than 10% of the population had access to a healthcare facility within 1 hour of walking, and only one in three healthcare facilities employed a female healthcare worker. Furthermore, Afghanistan's maternal and child mortality rates were among the highest globally. To address the lack of basic healthcare services and improve health outcomes, donors collaborated with the Ministry of Public Health (MoPH) to develop public healthcare packages for primary healthcare services in 2003 and hospital services in 2005.[5] To facilitate rapid scale-up of basic healthcare services, implementation of the packages was contracted out to international and national NGOs.[5] Contracts are awarded by the province through a competitive bidding process. Contracted NGOs implement the packages according to predefined standards and guidelines. Their adherence to guidelines and performance are monitored by a third party.

Since the introduction of these packages in 2003 and 2005, there have been notable achievements in improving access to healthcare services. The packages were designed to provide basic healthcare services addressing major health problems free of charge and accessible to all citizens.[5] The focus was primarily on maternal and child healthcare services and communicable diseases. The main objective was to enhance healthcare delivery, particularly for mothers, children and the rural poor. As a result, the number of public healthcare facilities increased by 70%, while the number of midwives increased by a factor of 10 between 2004 and 2011. Public healthcare facilities were also better equipped; the availability of essential equipment and pharmaceuticals increased by 25% and 11%, respectively, between 2004 and 2018.[6] Indeed, studies have shown an increase in the utilisation of essential maternal healthcare services from public healthcare facilities and a decline in maternal and child mortality between 2000 and 2017.[5 7 8]

Despite these achievements, inequities in access to healthcare services are persistent and out-of-pocket expenditures are high. Studies and nationally representative health surveys show considerable geographical and socio-economic disparities in using maternal healthcare services like antenatal care and skilled birth attendance.[9–11] Furthermore, the private sector remains the preferred source of care for many health needs despite its high costs.[1] In 2017, over 75% of healthcare expenditure was paid out-of-pocket, a symptom of inadequate or ineffective public healthcare service delivery.[12]

The public healthcare sector can play an important role in bridging the equity gap and reducing out-of-pocket expenditures. To design effective policies that address this issue, it is essential to understand the drivers of treatment-seeking behaviour. Previous studies have shown that treatment-seeking behaviour is different depending on sex, age, socio-economic status and level of education. However, little is known about how variation in accessibility of public healthcare services from a provider and patient perspective affect treatment-seeking behaviour.

Therefore, the objective of this study is to identify factors along all dimensions of access to healthcare that affect treatment-seeking behaviour in Afghanistan. We combined data on treatment-seeking behaviour from the Afghanistan Health Survey (AHS) of 2018 with data on public healthcare facilities from a national healthcare facility assessment of the same year.[6 11] We analysed variations in treatment-seeking and choice of healthcare provider and explored associations with client characteristics and accessibility of public healthcare services. The results of this study provide insights into the gaps in public healthcare delivery in Afghanistan prior to the takeover of the government by the Taliban in 2021. Nonetheless, the results can inform discussions on how the healthcare system can be transformed to narrow the equity gap in the current context.

METHODS

Study design and conceptual framework

This is a cross-sectional study based on a secondary analysis of the AHS 2018[11] in combination with data from other sources as described under 'Data' section. Subjects were individuals who were sick or unable to perform normal activities because of disability or illness in the 2 weeks preceding the survey and individuals who sought advice or treatment from any source, including from a community health worker, doctor or traditional healer in the public or private sector for their illness or disability. We used the Levesque framework of patient-centred access to healthcare services to guide the analysis and interpretation of results.[13] This is a comprehensive framework that identifies five dimensions on the supplier side: approachability, acceptability, availability and accommodation, affordability and appropriateness, and five dimensions on the demand side: ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage.[13]

Data

Afghanistan Health Survey

Individual-level data on health-seeking behaviour and characteristics were derived from the AHS 2018.[11] This is a nationally representative survey designed to estimate

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priority health indicators for each of Afghanistan's 34 provinces. The survey sample consisted of 23 460 households, which were selected following a two-stage clustered sampling design. The first stage consisted of a random sample of clusters (enumeration areas) stratified by province and urban and rural areas. Within each cluster, a random sample of 23 households was selected after a listing of all households in the cluster was performed. A detailed description of the sample size calculation can be found in Annex A1 of the original AHS report.[11] A comprehensive quality assurance plan was developed to ensure data quality, which consisted of active and post-monitoring of surveyor teams, cluster-wise screening of incoming data and double data entry (Annex A4 of the original AHS report[11]). Four clusters were excluded from the final dataset due to insufficient quality.

The two outcome variables that were modelled were defined as follows:

1. Treatment-seeking: individuals who were sick or unable to perform normal activities because of disability or illness in 2 weeks preceding the survey, and individuals who sought any advice or treatment, including from a community health worker, doctor or traditional healer for their illness or disability in the public or private sector.
2. Choice of provider: individuals who sought advice or treatment for their illness or disability from a public healthcare provider.

In the AHS, a public healthcare provider was defined as a 'MoPH clinic', 'MoPH hospital' or 'Health post'. These categories include all healthcare facilities and hospitals that are managed directly by MoPH or by NGOs that are contracted by MoPH or are otherwise managed by NGOs.

Additional datasets

Data on accessibility of public healthcare services and client perspectives were derived from the Balanced Scorecard (BSC) 2018.[6] This is an annual healthcare facility assessment aimed at monitoring the quality of services provision across Basic Package of Health Services (BPHS) facilities in Afghanistan through a facility checklist, exit interview, client provider observations and healthcare worker interviews. A more detailed description of the methodology of the BSC is described in the 2018 Balanced Scorecard Report.[6] Provincial BSC results were merged with the individual-level data from the AHS 2018.

Additional data include conflict severity and data on Taliban-controlled, government-controlled and contested districts. The conflict severity index was created by the World Bank (WB) in 2016 based on security incidents, civilian causalities and conflict-induced displacement per district.[14] Data on Taliban-controlled, government-controlled or contested districts were derived from a map published by BBC Research (2017).[15] Data on availability of female healthcare workers were derived from the Health Management Information System (HMIS). These data were merged on the district level with the AHS data.

Covariates describing client characteristics and accessibility of public healthcare facilities were selected according to the Levesque framework. At least one variable per dimension was selected from one of the data sources. In addition to the dimensions of access to healthcare, security and sociodemographic variables were added. An overview of the selected variables for each dimension is provided in table 1.

The covariate 'Travel time to healthcare facility' was only asked of individuals who had sought advice or treatment for their illness. These variables were aggregated on a provincial level and used as a continuous covariate for the first model but were treated as a categorical individual-level variable in the second model.

Statistical analysis

Pearson's correlation coefficients were calculated to assess multicollinearity among the selected covariates. Variables with a significant coefficient ($p<0.05$) exceeding –0.7 were excluded from further analysis, and availability of medication was excluded from further analysis based on high correlation with both laboratory tests and equipment. Missing data among covariates did not exceed 2% (table 2), and <3% of respondents were excluded from the regression models due to missing data.

Univariable and multivariable logistic regression models were fitted to the data. To limit the number of covariates measured at the province and district level in our model, a preselection was made by including all such variables in a multivariable model and excluding variables not significant at the 5% level following a backward selection approach. The remaining covariates were included in the final model for which no further selection (ie, backward, forward or stepwise) was made. An association was considered significant when the p value was <5%. The models were developed considering the multistage sampling design by incorporating adjustments for clustering and stratification and applying design weights. ORs and CIs were reported for all parameters. Data management and analysis were conducted using Stata V.15.

RESULTS

The study population consists of 26 663 individuals who were sick or unable to perform normal activities in the 2 weeks preceding the survey (table 2). There were slightly more female (56%) than male (44%) individuals. Participants aged 15–49 years form the biggest age group (41%), followed by children under the age of 5 years (26%). The majority of individuals received no education (59%) and resided in rural areas (69%). Main health complaints included fever (21%), cough and/or difficulty breathing (18%) and gastrointestinal problems including diarrhoea, vomiting or stomach pains (13%). The latter can be explained by the fact that data were collected during the summer months, during which gastrointestinal illnesses are more prevalent.

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Table 1 Overview of covariates and data source by dimension

Dimension	Indicator	Source
Approachability	Level of community engagement by BPHS facility (0–100)*	BSC
	Healthcare worker satisfaction (0–100)*	BSC
Acceptability	Outpatient concentration index (0–100)*	BSC
	Female healthcare workers per 10 000 population†	HMIS
	BPHS client satisfaction with respectfulness of provider (%)*	BSC
Availability and accommodation	Share of private healthcare providers†	HMIS
	Availability of a female nurse in BPHS facilities (%)*	BSC
	Availability of a midwife in BPHS facilities (%)*	BSC
	The average availability of required equipment in BPHS facilities (%)*	BSC
	The average availability of required medication in BPHS facilities (%)*	BSC
	The average availability of required laboratory tests in BPHS facilities (%)*	BSC
	BPHS client satisfaction with opening hours (%)*	BSC
Affordability	Average expenditure on healthcare services (Afghani) among people who sought treatment for their illness or disability*	AHS
Appropriateness	Percentage of BPHS clients who received at least 9 min of consultation time*	BSC
	Percentage of BPHS healthcare workers who received training in the past 12 months (%)*	BSC
	Average knowledge score of BPHS healthcare workers (0–100)*	BSC
Ability to perceive	The average level of trust in service providers among ever-married women aged 12–49 years who visited a healthcare facility in the past 2 weeks (0–100)*	AHS
Ability to seek	At least one woman in the household aware of community health worker services in their area (yes/no)	AHS
Ability to reach	Percentage of population living within 2 hours travel time to the nearest healthcare facility or health post (%)‡*	AHS
	Less than 2 hours travel time to a healthcare facility or health post (yes/no)§	AHS
	Ownership of a car or a bicycle	AHS
Ability to pay	Percentage of population using distressed financing for hospitalisation (%)*	BSC
Ability to engage	Percentage of BPHS consultations where healthcare worker explains disease course and treatment (%)*	BSC
Security	Conflict severity index (0–400)†	WB
	Living in a district controlled by the government, the Taliban or contested†	BBC
Sociodemographic	The wealth quintile of household	AHS
	Gender (male/female)	AHS
	Level of education	AHS
	Age category	AHS
	Region of residency	AHS
	Residency (urban/rural)	AHS
Characteristics of illness	Type of illness (by disease category)	AHS
	Onset of illness	AHS

*Measured on the provincial level.
†Measured on the district level.
‡Only included in the model on treatment-seeking.
§Only included in the model on the choice of provider.
AHS, Afghanistan Health Survey; BBC, British Broadcasting Corporation; BPHS, Basic Package of Health Services; BSC, Balanced Scorecard; HMIS, Health Management Information System; WB, World Bank.

Out of the 26 663 individuals with an illness, 77% sought treatment for the complaint, and 31% sought treatment from a public provider (table 2). Figure 1 shows the geographical distribution of the percentage of individuals who sought treatment for their illness and disability (left) and the percentage of individuals who sought treatment

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Table 2 Descriptive statistics of the study participants with treatment-seeking behaviour and choice of provider for individual-level variables

	Total		Sought treatment (% out of total)		Sought treatment at MoPH (% out of sought treatment)	
	N*	%	N*	%	N*	%
Total	26663	100	20367	77	6338	31
Sociodemographics						
Sex	26663	100	20367		6338	
Female	14973	56	11472	77	3693	32
Male	11691	44	8896	76	2645	30
Age group (years)	26663	100	20367		6339	
<5	6869	26	5257	77	1773	34
5–14	4568	17	3329	73	1083	33
15–49	10860	41	8408	77	2562	30
>49	4367	16	3373	77	921	27
Level of education	26663	100	20367		6338	
No education	15834	59	11794	74	3993	34
Primary	4195	16	3214	77	1000	31
Secondary	1873	7	1541	82	451	29
Higher	4630	17	3750	81	868	23
Missing	132	0	69	52	26	38
Wealth quintile	26663	100	20367		6338	
Lowest	4815	18	3122	65	1421	46
Second	4694	18	3740	80	1466	39
Middle	4861	18	3783	78	1186	31
Fourth	5716	21	4451	78	1151	26
Highest	6105	23	4913	80	1039	21
Missing	473	2	358	76	75	21
Region	26663	100	20367		6339	
Central	1588	6	1370	86	495	36
North East	2401	9	1803	75	527	29
North West	4155	16	3765	91	677	18
East	6696	25	5214	78	1457	28
West	6793	25	4125	61	1392	34
South East	3090	12	2728	88	1223	45
South West	1940	7	1363	70	568	42
Residency	26663	100	20367		6339	
Rural	18380	69	13969	76	4825	35
Urban	8283	31	6398	77	1514	24
Households aware of community health workers	26663	100	20367		6339	
No	23690	89	18124	77	5551	31
Yes	2974	11	2243	75	788	35
Ownership of bicycle or care	26663	100	20367		6339	
Yes	9639	36	7855	81	2198	28
No	17024	64	12512	73	4141	33
Control	26663	100	20367		6339	
Government	12419	47	9223	74	2878	31

Continued

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Table 2 Continued

	Total		Sought treatment (% out of total)		Sought treatment at MoPH (% out of sought treatment)	
	N*	%	N*	%	N*	%
Taliban	558	2	408	73	164	40
Contested	13687	51	10736	78	3297	31
Travel time to the facility			20367		6339	
<2 hours			18453		5952	32
>2 hours			1875		377	20
Missing			40		10	24
Type of illness	26663	100	20367		6339	
Fever	5561	21	4094	74	1352	33
Cough/Difficulty breathing	4813	18	3458	72	928	27
Gastrointestinal	3366	13	2592	77	1002	39
Pregnancy-related	630	2	544	86	243	45
Temporary injury	212	1	192	91	89	47
Skin problems	776	3	629	81	180	29
Cardiovascular	2655	10	2273	86	638	28
Ear, nose, throat	1373	5	1095	80	384	35
Eye problems	448	2	326	73	118	36
Urinary tract	1443	5	1211	84	323	27
Permanent disability	168	1	92	55	18	20
Mental health	538	2	420	78	96	23
Arthritis	1925	7	1354	70	385	28
Poor nutrition	120	0	103	86	35	34
Other	2584	10	1944	75	540	28
Missing	50	0	38	76	8	20
Type of illness	26663	100	20367		6338	
<1 week	6027	23	4119	68	1471	36
1–2 weeks ago	9015	34	7208	80	2358	33
2–4 weeks ago	770	3	620	81	200	32
>4 weeks ago	10753	40	8339	78	2284	27
Missing	99	0	81	82	25	31

*Numbers are weighted and may not add up to the total as a result of rounding.
MoPH, Ministry of Public Health.

from a public provider (right). Treatment-seeking ranges from 45% in Farah province to 99% in Khost. A lower percentage of treatment-seeking behaviour is observed for provinces in the West and South West of the country. Treatment-seeking from a public healthcare provider is higher in Central and Eastern provinces and ranges from 9% in Kunduz to 81% in Zabul.

A number of variables were measured at a provincial level. Online supplemental file 1 provides a description of those variables.

Regression analysis

Sociodemographic covariates associated with treatment-seeking and type of providers

Table 3 provides the results from the multivariable regression analysis. Univariable results can be found in online supplemental file 2. Wealth quintile and residency were the main sociodemographic factors associated with seeking medical treatment and provider selection. People from higher wealth quintiles were more likely to seek treatment and use private healthcare providers than people from lower wealth quintiles. Furthermore, the interaction between wealth quintile and residency suggests that urban residents were less likely to seek treatment (ORs range from 0.11 to 0.19) unless they are from

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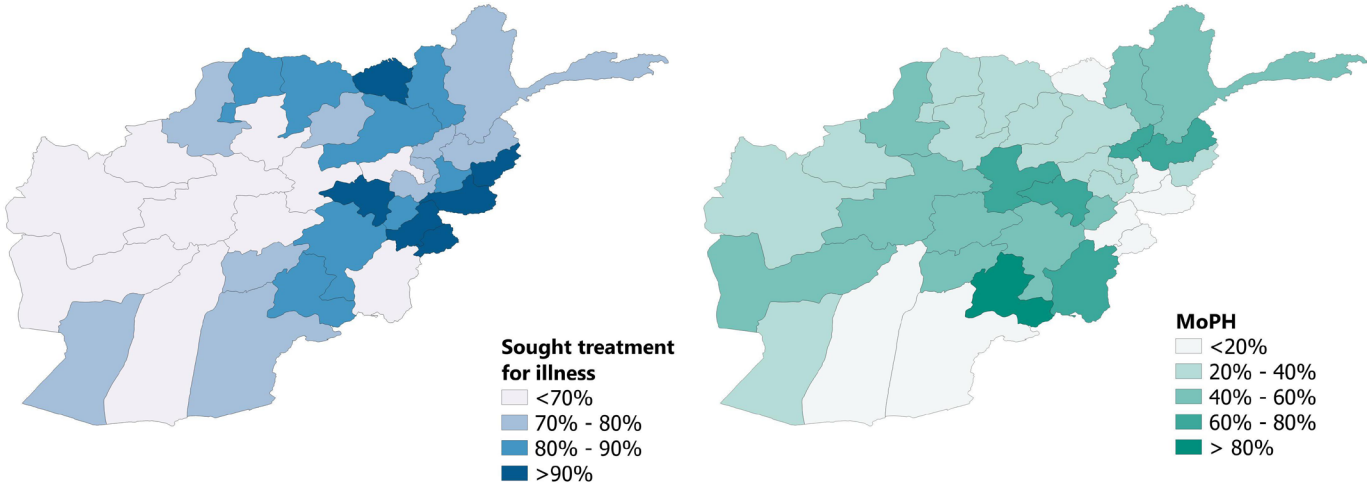

Figure 1 Left: individuals who were sick or unable to perform normal activities because of disability or illness in 2 weeks preceding the survey and who sought advice or treatment from a community health worker, doctor or traditional healer for their illness or disability. Right: individuals who sought advice or treatment for their illness or disability from a public healthcare provider as opposed to a private healthcare provider (out of those seeking treatment for their illness). MoPH, Ministry of Public Health.

the lowest wealth quintile. Among this group, the urban poor were far more likely (OR 3.52, 95% CI 1.20 to 10.36) to seek treatment than their rural counterparts. However, residency is not associated with the choice of provider.

We also found significant regional differences in seeking treatment and choosing a provider. Compared with people living in Central Afghanistan, people from North East (OR 1.57, 95% CI 1.12 to 2.20) were more likely to seek treatment, whereas those from the West (OR 0.42, 95% CI 0.27 to 0.64) and South West (OR 0.65, 95% CI 0.46 to 0.91) were less likely to do so. Additionally, people in the North East, East, West and South West were more likely to use private healthcare providers than those in Central Afghanistan (ORs range from 0.42 to 0.62).

Sociodemographic factors such as sex and level of education did not show any association with seeking medical treatment and choice of provider. However, the results suggest that age may play a role, as children aged 5–14 years were less likely to seek treatment than those under 5 years (OR 0.73, 95% CI 0.61 to 0.89), but there was no observed age difference in choice of provider.

Acceptability, availability, affordability, appropriateness of service delivery

Individuals living in areas with BPHS facilities that are well-equipped (OR 1.05, 95% CI 1.02 to 1.08) and where satisfaction with the respectfulness of provider is higher (OR 1.07, 95% CI 1.03 to 1.10) were more likely to seek medical treatment. Conversely, satisfaction with opening hours of BPHS facilities (OR 0.97, 95% CI 0.96 to 0.98) was negatively associated with seeking treatment but positively associated with choosing a public provider (OR 1.04, 95% CI 1.02 to 1.05). Furthermore, individuals living in areas with higher expenditure for outpatient services and more trained BPHS healthcare workers were less likely to seek treatment and less likely to choose a public provider (ORs range from 0.96 to 0.99). Finally, individuals living in areas where the private sector is more dominant are more likely to access private healthcare (OR 0.97, 95% CI 0.96 to 0.98).

Ability to perceive, seek, reach, pay and engage

A person's ability to reach a healthcare facility was associated with seeking treatment and provider choice. First, household ownership of a car or bicycle is associated with a 24% increased likelihood of seeking treatment (OR 1.24, 95% CI 1.06 to 1.46). Second, individuals who had to travel >2 hours to reach a healthcare facility were more likely to seek care from a private provider (OR 0.34, 95% CI 0.22 to 0.53), potentially bypassing closer public healthcare facilities. However, individuals living in provinces where the percentage of people who travelled <2 hours to reach the healthcare facility was higher were less likely to seek treatment (OR 0.96, 95% CI 0.94 to 0.99).

The ability to pay, like the affordability of services, also affects treatment-seeking behaviour. Those residing in provinces with higher levels of distressed financing were more likely to seek treatment from a public provider (OR 1.04, 95% CI 1.03 to 1.05). Additionally, people were more likely to seek treatment from a private provider in areas where the cost of services is an important reason not to seek treatment (OR 0.98, 95% CI 0.97 to 0.99).

People were less likely to seek treatment (OR 0.98, 95% CI 0.97 to 1.00) but more likely to seek treatment from a public provider (OR 1.04, 95% CI 1.03 to 1.06) in areas where the level of trust in service providers is higher. On the contrary, in provinces where BPHS healthcare workers provided more explanation during consultations, people were slightly more likely to seek treatment from a private provider (OR 0.99, 95% CI 0.99 to 1.00).

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Table 3 Results of multivariable regression analysis on treatment-seeking (yes/no) and choice of provider (MoPH/private)

	Model 1: treatment-seeking (yes/no)		Model 2: treatment-seeking MoPH (MoPH/private)	
	OR	95% CI	OR	95% CI
Intercept	0.21	(0.02 to 2.24)	0.19	(0.02 to 2.28)
Sociodemographics				
Sex (female)				
Male	1.06	(0.93 to 1.19)	0.93	(0.81 to 1.07)
Age group (<5 years)				
5–14 years	0.73**	(0.61 to 0.89)	0.95	(0.75 to 1.20)
15–49 years	0.89	(0.75 to 1.06)	0.90	(0.73 to 1.11)
>49 years	0.86	(0.67 to 1.10)	0.82	(0.62 to 1.09)
Level of education (no education)				
Primary	1.11	(0.90 to 1.36)	1.14	(0.90 to 1.44)
Secondary	1.15	(0.81 to 1.63)	0.94	(0.67 to 1.30)
Higher	1.12	(0.82 to 1.52)	0.87	(0.70 to 1.08)
Wealth quintile (lowest)				
Second	1.47***	(1.20 to 1.81)	0.82	(0.64 to 1.05)
Middle	1.38*	(1.03 to 1.85)	0.66**	(0.51 to 0.85)
Fourth	1.93***	(1.36 to 2.74)	0.58**	(0.41 to 0.82)
Highest	2.31*	(1.11 to 4.83)	0.55**	(0.36 to 0.84)
Residency (rural)				
Urban	3.52*	(1.20 to 10.36)	1.00	(0.71 to 1.42)
Wealth quintile×residency (lowest—urban)				
Second—urban	0.11***	(0.03 to 0.37)		
Middle—urban	0.16**	(0.05 to 0.55)		
Fourth—urban	0.13***	(0.04 to 0.44)		
Highest—urban	0.19*	(0.05 to 0.67)		
Region (central)				
North East	1.57**	(1.12 to 2.20)	0.62*	(0.41 to 0.95)
North West	0.95	(0.64 to 1.41)	0.69	(0.41 to 1.17)
East	0.75	(0.47 to 1.21)	0.42**	(0.23 to 0.79)
West	0.42***	(0.27 to 0.64)	0.55*	(0.32 to 0.93)
South East	1.77	(0.99 to 3.18)	1.11	(0.64 to 1.92)
South West	0.65*	(0.46 to 0.91)	0.49**	(0.31 to 0.75)
Acceptability, availability, affordability, appropriateness				
Share of private healthcare providers	1.01	(1.00 to 1.01)	0.97***	(0.96 to 0.98)
Outpatient concentration index	*n/a*		*n/a*	
Healthcare worker satisfaction	*n/a*		0.98	(0.96 to 1.01)
Satisfaction with opening hours	0.97***	(0.96 to 0.98)	1.04***	(1.02 to 1.05)
Female healthcare worker to population ratio	1.01	(1.00 to 1.02)	1.00	(0.99 to 1.02)
Availability of female nurse or doctor	1.01	(0.99 to 1.03)	1.03***	(1.01 to 1.04)
Availability of midwife	1.02	(1.00 to 1.04)	*n/a*	
Satisfaction with the provider's respectfulness	1.07***	(1.03 to 1.10)	*n/a*	
Availability of laboratory tests	0.99*	(0.99 to 1.00)	*n/a*	
Availability of equipment	1.05**	(1.02 to 1.08)	0.99	(0.96 to 1.01)
The average expenditure of outpatient services	0.96***	(0.95 to 0.98)	0.97***	(0.96 to 0.99)
Consultation time	0.99	(0.98 to 1.00)	*n/a*	

Continued

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Table 3 Continued

	Model 1: treatment-seeking (yes/no)		Model 2: treatment-seeking MoPH (MoPH/private)	
	OR	95% CI	OR	95% CI
Knowledge of healthcare workers	*n/a*		*n/a*	
Training of healthcare workers	0.98***	(0.97 to 0.99)	0.99*	(0.98 to 1.00)
Ability to perceive, seek, reach, pay, engage				
Community involvement	1.02	(1.00 to 1.04)	*n/a*	
Average level of trust in service provider	0.98*	(0.97 to 1.00)	1.04***	(1.03 to 1.06)
Households aware of community health workers (no)				
Yes	1.12	(0.89 to 1.40)	0.95	(0.74 to 1.21)
Ownership of bicycle or car	1.24**	(1.06 to 1.46)	0.92	(0.76 to 1.10)
Travel time to facility <2 hours (%)	0.96**	(0.94 to 0.99)		
Travel time to the facility (<2 hours)				
>2 hours			0.34***	(0.22 to 0.53)
Distressed financing	*n/a*		1.04***	(1.03 to 1.05)
Services are too expensive	1.00	(0.99 to 1.00)	0.98***	(0.97 to 0.99)
Healthcare worker explanation	*n/a*		0.99***	(0.99 to 1.00)
Insecurity				
Conflict severity index	*n/a*		0.99*	(0.97 to 1.00)
Control (government)				
Taliban	0.41***	(0.27 to 0.64)	*n/a*	
Contested	0.95	(0.79 to 1.15)	*n/a*	
Characteristics of illness				
Type of illness (fever)				
Cough/Difficulty breathing	0.81	(0.63 to 1.03)	0.90	(0.71 to 1.13)
Gastrointestinal	1.20	(0.98 to 1.46)	1.42**	(1.15 to 1.75)
Pregnancy-related	2.20**	(1.31 to 3.70)	2.31***	(1.54 to 3.45)
Temporary injury	3.40**	(1.50 to 7.74)	2.31*	(1.18 to 4.53)
Skin problems	1.34	(0.90 to 2.01)	0.92	(0.61 to 1.39)
Cardiovascular	1.91***	(1.37 to 2.68)	1.17	(0.91 to 1.51)
Ear, nose, throat	1.28	(0.88 to 1.87)	1.22	(0.90 to 1.64)
Eye problems	1.04	(0.58 to 1.86)	1.48	(0.95 to 2.29)
Urinary tract	1.78**	(1.20 to 2.64)	0.94	(0.68 to 1.30)
Permanent disability	0.42**	(0.23 to 0.78)	0.75	(0.33 to 1.69)
Mental health	1.07	(0.65 to 1.78)	1.02	(0.65 to 1.59)
Arthritis	0.84	(0.61 to 1.14)	0.96	(0.67 to 1.36)
Poor nutrition	1.28	(0.56 to 2.95)	1.20	(0.68 to 2.13)
Other	1.05	(0.83 to 1.32)	1.00	(0.76 to 1.33)
Onset of illness (<1 week ago)				
1–2 weeks ago	2.00***	(1.64 to 2.43)	0.84	(0.67 to 1.05)
2–4 weeks ago	2.33***	(1.43 to 3.82)	0.80	(0.56 to 1.16)
>4 weeks ago	1.72***	(1.39 to 2.13)	0.70***	(0.57 to 0.86)
Goodness-of-fit				
Hosmer-Lemeshow	0.54		0.71	
McKelvey and Zavoina's R^2	0.24		0.21	

*p<0.05, **p<0.01, ***p<0.001.
n/a = excluded from final model after variable selection
MoPH, Ministry of Public Health; n/a, excluded from final model after variable selection.

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Insecurity

There is some evidence that insecurity negatively affects treatment-seeking and may increase the utilisation of private providers. People living in Taliban-controlled districts were 59% less likely to seek treatment (OR 0.41, 95% CI 0.27 to 0.64), while those living in districts with a higher conflict severity index were slightly less likely to seek treatment from a public provider (OR 0.99, 95% CI 0.97 to 1.00).

Characteristics of illness

Finally, we found that the nature and duration of an illness influence an individual's decision to seek treatment and the type of provider they choose. Those experiencing pregnancy-related complications, temporary (ie, non-permanent) injuries, cardiovascular issues or urinary system problems are more likely to seek treatment (ORs range from 1.78 to 3.40). People with a permanent disability were less likely to seek treatment (OR 0.42, 95% CI 0.23 to 0.78).

Among those seeking treatment, those with gastrointestinal problems, pregnancy-related complications or temporary injuries were more likely to choose a public provider (ORs range from 1.42 to 2.31). The duration of the illness plays a role, too, with individuals more likely to seek treatment if they have been sick for more than a week and more likely to seek treatment from a private healthcare provider if they have been ill for >4 weeks (OR 0.70, 95% CI 0.57 to 0.86).

DISCUSSION

The study confirms that Afghanistan's public healthcare system was an important source of care for people living in poverty, for the treatment of infectious diseases and for maternal healthcare services in 2018. Nonetheless, sociodemographic disparities in treatment-seeking remain and financial barriers to access were persistent. The dominant private sector appeared to fill a health need insufficiently addressed by the public healthcare system: the management of chronic illnesses. As such, there is scope for the public health system to address financial barriers to accessing healthcare by expanding its service packages to include the management of chronic illness.

The BPHS package strongly focuses on infectious diseases, maternal healthcare services and rural communities.[16] Up to now, the heavily donor-dependent BPHS forms the backbone of Afghanistan's public primary healthcare services. One of its main objectives was to increase access to essential maternal and child healthcare services to the rural poor.[16] Our results suggest that the rural poor remained the most vulnerable group as they were least likely to seek treatment for their illness or disability, and geographical disparities remain persistent. In agreement with other literature, we found that people from the lowest wealth quintile were more reliant on public healthcare services.[10 17–20] Other associations with sociodemographic characteristics such as age, level of education and gender, as reported in the literature, were not confirmed by this study.[10 17 20–22] In line with the scope of the BPHS—which has a strong focus on maternal and child healthcare services and communicable diseases—we found that individuals suffering from gastrointestinal or pregnancy-related health needs were more likely to seek treatment and use public healthcare services.

Despite the significant burden of non-communicable diseases (NCDs) in Afghanistan—an estimated 38% of disability-adjusted life years and 45% of mortality—the public healthcare system lacks the resources to provide care for NCDs.[23] Indeed, the management of NCDs lies mainly in the private sector and tertiary level of care.[24] Our results suggest that individuals whose symptoms started >4 weeks ago were more likely to seek treatment from a private provider. This group consists of individuals with more chronic and less acute illnesses. Furthermore, people who travel >2 hours to reach healthcare are more likely to seek treatment from a private provider, potentially bypassing public healthcare facilities that are closer. Among them, eye conditions, permanent disabilities and mental health issues appear to be more prevalent. Both findings suggest that people may not find the care they require in public healthcare facilities. In 2019, an Integrated Package of Essential Health Services was developed to include prevalent NCDs like diabetes and hypertension. However, to date, this has not yet been implemented.[25]

Affordability of services and the ability to pay for services stand out more prominently than other dimensions of access to healthcare. Higher costs of services were associated with lower odds of treatment-seeking and using private healthcare. Furthermore, higher levels of distressed financing were associated with using a public provider. These results are unsurprising as the cost of services is a known barrier to accessing care, and private facilities are generally more expensive.[1 26 27] Nonetheless, these results suggest that the public healthcare system cannot protect people from incurring financial distress when accessing healthcare. The majority of out-of-pocket expenditures in both public and private healthcare facilities go to medicines and supplies.[11] In public facilities, these expenses are often incurred as a result of undersupplied healthcare facilities.[28 29] There is an opportunity here for the public healthcare system to ensure the availability of affordable essential medication to address the issue.

The associations between availability and (perceived) quality of services are somewhat contradictory. On the one hand, satisfaction with opening hours, availability of a female nurse or doctor and trust in service providers are associated with seeking treatment from a public provider. On the other hand, increased training of and explanation by BPHS healthcare workers appear to work in favour of private healthcare providers. Various studies confirm that availability, (perceived) quality of services and trust in providers influence treatment-seeking behaviour.[30–35] While the study findings are not

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fully aligned with our hypothesis, there is still evidence to believe that improving the availability and accessibility of public healthcare services may draw patients to the public healthcare sector.

The future of Afghanistan's healthcare system is uncertain as donors and other stakeholders adapt to a new political context, with a new de facto government that is not acknowledged by the international community. While financial donor assistance has diminished, the system has shown a certain level of resilience after the political change in August 2021, despite disruptions in service delivery and availability of essential commodities.[36] The current focus is on maintaining and restoring what is there: a system geared towards a vulnerable group of people. Yet our analyses show that the system struggled to adequately serve the lowest wealth quintiles even in 2018, before the political change and funding cuts. The private sector plays an important complementary role, especially for chronic illnesses. As a result, any scaling down of public healthcare services will disproportionally affect the poorest and most vulnerable people. On one hand, this underscores the urgency of continued support of the international community for the Afghan health sector. On the other hand, it also highlights the limits of what can be achieved with the current public healthcare packages in Afghanistan. A long-term approach to transforming the healthcare system into one that is more equitable and patient-centred should include strategies to address financial barriers and expand the scope of services to include the management of chronic illnesses at affordable cost.

Limitations

The study has two main methodological limitations. First and foremost, a more robust way of modelling the effect of provider characteristics on the choice of provider would be to use a choice model. Such a model requires data on the characteristics of the chosen provider as well as the alternative provider(s). Unfortunately, provider characteristics were only available for public healthcare facilities. Second, we could only link data on the quality and accessibility of public healthcare facilities on the provincial level, which does not reflect local variation in the quality and accessibility of public healthcare services. However, it should be noted that public healthcare in Afghanistan is contracted out to NGOs at the provincial level. Consequently, province-level variables may still reflect differences in healthcare delivery between NGOs.

In addition, the analyses presented here attempt to quantify complex behaviour that might be better assessed with a mixture of quantitative and qualitative research approaches. Treatment-seeking is influenced by a wide range of client and provider factors, as described in the Levesque framework that guided our analyses. The factors considered in this study are not all-encompassing of access to healthcare; various known attributes of quality and accessibility of healthcare could not be included in this study. Furthermore, a statistical model in itself cannot adequately capture the various pathways through which these dimensions act—and interact with each other—in determining health-seeking behaviour. While the regression models fitted here inevitably oversimplify these processes, they allow us to assess the effects of determinants of treatment-seeking behaviour on a larger scale than most qualitative studies can. To our knowledge, this study is the first to link quality and access attributes of the public healthcare system to individual-level data on treatment-seeking behaviour in Afghanistan. Finally, the distinction between public and private providers is ambiguous, particularly from a patient perspective. Study participants may also consult a variety of providers, both public and private, formal and informal. This study was not designed to capture the full patient journey.

Future research

An incredible amount of data has been collected on the functionality and quality of Afghanistan's public healthcare facilities, which are largely underused. There is ample scope for future research that leverages these existing sources of data to further our understanding of the performance of the Afghan public healthcare system in relation to population needs. These data also provide opportunities to further analyse changes in treatment-seeking behaviour under the current political context.

To further deepen our understanding of the drivers behind healthcare provider choice in the context of Afghanistan, a discrete choice experiment design should be considered.[37–39] This could be complemented by qualitative research focused on mapping the patient journey for a set of crucial healthcare services to better understand the complexities of treatment-seeking behaviour. The study might focus on provinces such as Farah and Kunduz where treatment-seeking or use of public healthcare facilities was low.

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