



# Health Care Responsiveness by Conventional, Traditional and Complementary Medicine Providers in a National Sample of Middle-Aged and Older Adults in India in 2017–2018

Supa Pengpid <sup>1,2</sup>, Karl Peltzer <sup>3,4</sup>

<sup>1</sup>Department of Health Education and Behavioral Sciences, Faculty of Public Health Mahidol University, Bangkok, Thailand; <sup>2</sup>Department of Research Administration and Development, University of Limpopo, Turfloop, South Africa; <sup>3</sup>Department of Psychology, University of the Free State, Bloemfontein, South Africa; <sup>4</sup>Department of Psychology, College of Medical and Health Science, Asia University, Taichung, Taiwan

Correspondence: Karl Peltzer, Department of Psychology, University of the Free State, Bloemfontein, South Africa, Email [kpeltzer@gmail.com](mailto:kpeltzer@gmail.com)

**Introduction:** This study aimed to determine the prevalence and correlates of health care responsiveness by conventional, traditional and complementary medicine providers in middle-aged and older community-dwelling adults from the India Longitudinal Ageing Study in India (LASI) Wave 1 in 2017–2018.

**Methods:** The cross-sectional sample included 37,852 participants who received outpatient health care in the past 12 months, of which 33,615 had visited a conventional health facility, 2120 an AYUSH facility, and 2117 a traditional health practitioner (THP).

**Results:** The prevalence of poor health care responsiveness was 10.1% overall, and 10.7% for the conventional health facility, 8.3% for AYUSH, and 5.7% for the THP. In adjusted logistic regression analysis using the whole sample, the prevalence of poor health care responsiveness was significantly lower among AYUSH and THP clients than among conventional health care clients. Having higher education, higher socioeconomic status and being a Sikh decreased the odds of poor health care responsiveness, while being a member of a caste, having two or more chronic diseases, functional disability, and visiting the health facility for immunisation increased the odds of poor health care responsiveness. In regard to the AYUSH provider, older age decreased the odds and member of a caste, being a Christian and functional disability increased the odds of poor health care responsiveness, and in terms of the THP, being a Sikh decreased the odds and older age, functional disability and visiting the THP for immunisation and for treatment for injury/accident increased the odds of poor health care responsiveness.

**Discussion:** One in ten middle-aged or older adults in India reported poor health care responsiveness, and several sociodemographic and health factors were identified associated with poor health care responsiveness by different service providers.

**Keywords:** health care responsiveness, complementary medicine, middle-aged, older adults, India

## Introduction

India, the second most populous nation on earth, is faced with a growing number of older adults.<sup>1,2</sup> “As populations age, health systems must adapt and develop approaches that meet the needs of older patients with increasing multiple chronic conditions. Understanding older populations’ perceptions of quality of care is critical to developing measures to increase the utilization of primary healthcare services”.<sup>3</sup> In response to demographic and epidemiological changes, it is important to assess health care responsiveness to improve effective health care in low-resource settings.<sup>4</sup> According to the World Health Organization (WHO) one of the key outcomes of health system performance is responsiveness.<sup>5</sup> Persons with a poorer assessment of the responsiveness to health care may avoid seeking and receiving needed health care.<sup>6</sup> The prevalence of poor outpatient health care responsiveness in six low- and middle-income countries was 7.5%, ranging from 3.8% in China to 28.8% in South Africa, and 10.1% in India in 2007–2008.<sup>4</sup>

Previous studies in India found that higher socioeconomic status was associated with better health care responsiveness among users of both public and private health facilities.<sup>7</sup> Although several studies distinguished public and private health care providers in determining health care responsiveness, mostly finding that private health care facilities had higher health care responsiveness than public health facilities,<sup>3,4,8–10</sup> we were unable to identify studies assessing health care responsiveness in different types of health system, such as conventional and complementary and/or alternative medicine. The Indian government recognises apart from conventional health care, “Indian systems of medicine AYUSH (Ayurveda, Yoga, Naturopathy, Unani, Siddha and Homeopathy), and traditional health practitioners (THP) who fall under Local Health Traditions (LHT) representing the healing practices and knowledge following an oral tradition of learning and passing on of the knowledge”.<sup>11,12</sup> In India, a significant proportion of middle-aged and older adults have visited AYUSH practitioners (6.5%) and THP (7.0%) in the past 12 months.<sup>13</sup>

Sociodemographic and health factors may be associated with poor health care responsiveness. For example, in a study in India, lower social class was associated with a longer waiting time,<sup>10</sup> and in another study in India, persons in the lower wealth group had poorer dignity health care response,<sup>7</sup> and among internal migrants in India, “only about 30% discussed treatment options (autonomy), 40% dignity, 50–60% clarity of communication and 59% confidentiality”.<sup>14</sup> In a six-country study among middle-aged and older adults in low- and middle-income countries lower wealth, rural residence, female sex, and difficulties with traveling time were associated with poor health care responsiveness.<sup>4</sup> In a study among middle-aged and older adults in South Africa, poor subjective health status and receipt of health insurance were associated with outpatient health care responsiveness.<sup>3</sup> In a four-country online survey, being from India (compared to Kenya, Mexico and Nigeria), younger age, rural residence and seen by a pharmacist or drug seller (compared to community health workers and specialists) were more likely to report poor health care quality,<sup>15</sup> and in a study among outpatients in Germany having chronic conditions and functional disability were associated with poor health care responsiveness indicators.<sup>6</sup> This study aimed to determine the prevalence and correlates of health care responsiveness by conventional, traditional and complementary medicine providers in middle-aged and older community-dwelling adults from the India Longitudinal Ageing Study in India (LASI) Wave 1 in 2017–2018.

## Methods

### Sample and Procedures

National secondary data from the cross-sectional “Longitudinal Ageing Study in India (LASI) Wave 1, 2017–2018” were analysed; “the overall household response rate is 96%, and the overall individual response rate is 87%”.<sup>16</sup> In a household survey, “interview, physical measurement and biomarker data were collected from individuals aged 45 and above and their spouses, regardless of age”.<sup>16</sup> The study was approved by the “Indian Council of Medical Research (ICMR) Ethics Committee and written informed consent was obtained from the participants”.<sup>16</sup>

### Measures

Outpatient health care utilization was assessed with the question, “Which type of health care provider did you visit, or came to visit you, most recently in the past 12 months?” Responses were grouped into 1) conventional (Doctor with MBBS, including surgeon, physician, gynecologist, psychiatrist, ophthalmologist, pharmacist, dentist, physiotherapist, and nurse/midwife), 2) AYUSH (ayurvedic/yoga/siddha/unani /homeopathy), and 3) “Traditional/Folk healers (tribal medicine/bhopa/jhaad-fook/Black magic)”. Those who answered affirmatively to this question, were asked six items on health care responsiveness including prompt attention (waiting time), dignity (talked respectfully), communication (clear explanations), choice (choice of health care provider), confidentiality (of information), and quality of basic amenities (cleanliness).<sup>16</sup> For each of the domain questions, the degree of responsiveness was evaluated from 1 very good to 5 very bad. Following previous scoring,<sup>3,17</sup> participants with any “bad” or “very bad”

responses to the six items received a poor health care responsiveness score =1, and participants with any “moderate”, “good” or “very good” received a responsiveness score of “0”.

Reasons of the last outpatient health care visit were asked, allowing multiple responses on 1) Immunization, 2) Consultation, 3) Medical check-up (under observation/routine checkup), 4) Treatment for illness, and 5) Treatment for injury/accident.<sup>16</sup>

Traveling time to the health facility was sourced from the questions “What was your travel time (one-way) to that facility?” (hours/minutes).<sup>16</sup>

Receipt of health insurance was asked with the question, “Are you covered by health insurance?” (Yes/No).<sup>16</sup>

The factors of health care need were evaluated with self-rated health status (1=poor or fair and 0=good, very good, or excellent) and seven chronic conditions (0, 1, 2–7). Chronic conditions were sourced from the questions, “Has any health professional ever told you that you have ... ?”: (1) “chronic lung disease such as asthma, chronic obstructive pulmonary disease/chronic bronchitis or other chronic lung problems; (2) cancer or malignant tumor; (3) chronic heart diseases such as coronary heart disease (heart attack or myocardial infarction), congestive heart failure, or other chronic heart problems; (4) diabetes or high blood sugar; (5) bone or joint disorder (arthritis or rheumatism, Osteoporosis or other bone/joint diseases); and (6) stroke. (Yes, No)”.<sup>16</sup> Angina was assessed with the “World Health Organization’s Rose angina questionnaire”.<sup>18</sup>

*Sociodemographic variables* included education and age in years, sex, religion, residence status, and caste (“Scheduled tribes, scheduled castes, other backward classes, and none of these”). “Scheduled tribes, scheduled castes, and other backward classes have been historically disadvantaged due to various socio-economic factors like wealth or traditional occupation and are given reservation by the government of India”.<sup>19</sup> Perceived socioeconomic status was sourced from the item, “Please imagine a ten-step ladder, where at the bottom are the people who are the worst off – who have the least money, least education, and the worst jobs or no jobs, and at the top of the ladder are the people who are the best off – those who have the most money, most education, and best jobs. Please indicate the number (1–10) on the rung on the ladder where you would place yourself”.<sup>16</sup> Steps 1 to 3 on the socioeconomic ladder were defined as low, 4–5 as medium, and 6–10 as high socioeconomic status.

The LASI survey instrument was validated in the LASI pilot study in 2010.<sup>20</sup>

## Data Analysis

Descriptive statistics were applied to describe sociodemographic information, health indicators, and health care responsiveness. Pearson’s chi-square tests were used to calculate differences in proportions. Unadjusted and adjusted logistic regression was utilized to assess associations between sociodemographic, health variables, and poor health care responsiveness (dependent variable).  $P < 0.05$  was accepted as significant, no multi-collinearity was detected, and missing values were excluded. Statistical analyses were conducted using “STATA software version 15.0 (Stata Corporation, College Station, TX, USA)”, taking the complex study design into account.

## Results

### Sample Characteristics

The sample included 37,852 participants that received outpatient health care in the past 12 months, of which 33,615 had visited a conventional health facility, 2120 an AYUSH facility and 2117 a traditional health practitioner. The prevalence of poor health care responsiveness was 10.1% overall, and 10.7% for the conventional health facility, 8.3% for AYUSH, and 5.7% for the THP (see Table 1).

### Health Responsiveness by Domain and by Health Care Type

Table 2 describes each domain of health system responsiveness by type of health care provider. Prompt attention, dignity, communication, choice, confidentiality, and basic amenities were the poorest for conventional, followed by AYUSH and/or THP (see Table 2).

**Table 1** Descriptive Data on Poor Health System Responsiveness by Type of Last Outpatient Visit Among Middle-Aged and Older Adults in India, 2017–2018

Variable	Type of Health Care Provider			
	All	Conventional	AYUSH	Traditional
	N=37852	N=33615	N=2120	N=2117
	%	%	%	%
All	10.1	10.7	8.3	5.7
Age in years				
45–59	10.2	10.8	10.4	4.1
60–69	9.9	10.6	5.9	6.7
70 or more	10.1	10.6	7.0	8.5
Sex				
Female	10.2	10.6	9.0	6.3
Male	10.0	10.8	7.1	4.8
Education				
No schooling	11.0	11.9	9.0	6.3
≥1 year	9.2	9.6	7.6	4.3
Socioeconomic status				
Low	11.1	12.0	9.3	5.6
Medium	10.2	10.8	7.4	6.6
High	8.1	8.4	7.8	3.2
Health insurance				
No	10.3	11.0	8.6	5.4
Yes	9.3	9.5	5.2	8.6
Residential status				
Rural	10.0	10.8	8.7	5.5
Urban	10.3	10.5	6.8	8.9
Caste status				
None	8.9	9.7	4.8	3.8
Caste	10.6	11.1	9.8	6.3
Religion				
Hindu	10.2	10.7	8.5	6.3
Muslim	10.8	12.0	6.9	3.2
Christian	9.7	9.3	28.4	10.6
Sikh	5.4	6.8	0.0	0.5
Other	7.4	8.0	3.1	10.1
Self-rated health status				
Good	9.5	10.0	7.9	5.2
Poor or fair	10.7	11.4	8.7	6.2
Chronic conditions				
Zero	9.6	9.9	8.4	5.5
One	11.4	11.2	8.5	6.9
Two or more	12.7	12.9	7.0	3.9

(Continued)

Table 1 (Continued).

Variable	Type of Health Care Provider			
	All	Conventional	AYUSH	Traditional
	N=37852	N=33615	N=2120	N=2117
	%	%	%	%
Functional disability				
No	9.5	10.3	6.6	4.3
Yes	12.8	12.4	16.4	13.1
Main purpose of visit				
Treatment for illness	10.0	10.8	8.4	4.7
Treatment for injury/accident	11.8	11.5	11.3	14.1
Immunisation	14.1	13.7	11.6	25.5
Medical check-up	10.9	11.0	6.3	15.7
Consultation	9.2	9.3	6.2	7.7
Time travelled				
<1 hr	9.9	10.5	7.8	5.1
≥1 hr	11.2	11.3	10.4	8.6

## Associations with Poor Health Care Responsiveness

In adjusted logistic regression analysis using the whole sample, the prevalence of poor health care responsiveness was significantly lower among AYUSH and traditional health practitioner (THP) clients than among conventional health care clients. Having higher education, higher socioeconomic status and being a Sikh decreased the odds of poor health care responsiveness, while being a member of a caste, having two or more chronic diseases, functional disability, and visiting the health facility for immunisation increased the odds of poor health care responsiveness. In addition, in unadjusted analysis, poor or fair self-rated health status increased the odds of poor health care responsiveness.

Regarding the conventional provider, having higher education, higher socioeconomic status and being a Sikh decreased the odds of poor health care responsiveness while having two or more chronic conditions, and visiting the health facility for immunisation increased the odds of poor health care responsiveness.

In regard to the AYUSH provider, older age decreased the odds and member of a caste, being a Christian and functional disability increased the odds of poor health care responsiveness.

In terms of the THP, being a Sikh decreased the odds and older age, functional disability and visiting the THP for immunisation and for treatment for injury/accident increased the odds of poor health care responsiveness (see Tables 3 and 4).

## Discussion

To our knowledge, this is the first evaluation on the prevalence and factors associated health care responsiveness by conventional, traditional and complementary medicine providers among middle-aged and older adults in a national community-based sample in India in 2017–2018. The overall prevalence of poor health care responsiveness (10.1%) in this study in 2017–2018 was the same (10.1%) as in a previous survey in 2007–2008 in India, higher than in China (3.8%) and lower than in South Africa (28.8%).<sup>4</sup> However, we found that the prevalence of poor outpatient health care responsiveness was significantly higher for the conventional facility (10.7%) than for AYUSH (8.3%) and THP (5.7%). In comparison, in a four-country study, including India, seen by a pharmacist or drug seller (compared to community health workers and specialists) were more likely to report poor health care quality.<sup>15</sup>

**Table 2** Health System Responsiveness by Domain and by Type of Health Care Provider

	Conventional	AYUSH	Traditional	p-value <sup>a</sup>
Prompt attention				
Very good/good	70.2	70.5	68.9	<0.001
Moderate	24.7	25.3	29.5	
Bad/very bad	5.1	4.2	1.6	
Dignity				
Very good/good	73.9	73.3	67.8	<0.001
Moderate	23.8	25.4	30.4	
Bad/very bad	2.4	1.2	1.8	
Communication				
Very good/good	74.1	73.5	69.6	0.021
Moderate	22.7	24.3	27.7	
Bad/very bad	3.2	2.2	2.7	
Choice				
Very good/good	73.4	78.3	66.0	<0.001
Moderate	23.2	19.7	31.6	
Bad/very bad	3.3	2.0	2.4	
Confidentiality				
Very good/good	71.6	76.0	69.5	0.012
Moderate	24.7	21.8	28.0	
Bad/very bad	3.7	2.2	2.5	
Basic amenities				
Very good/good	75.1	76.5	67.7	<0.001
Moderate	22.0	21.8	30.2	
Bad/very bad	2.9	1.6	2.2	

**Note:** <sup>a</sup>Based of Pearson Chi-square tests.

Possible explanations for the found differences may be related the better quality of AYUSH and/or THP mainly private services or high expectations among these service users.<sup>8</sup> In addition, large conventional facilities can be compromised with a longer waiting time than smaller AYUSH and THP facilities, and the latter will probably need to build a client base by increasing the quality of nonclinical care provided.<sup>7</sup> However, it should be noted that AYUSH and THP scored lower on the good or very good health care responsiveness indicators compared to conventional services.

Factors associated with poor health care responsiveness included the conventional health care provider, lower education, lower socioeconomic status, member of a caste, having two or more chronic conditions, functional disability and visiting the health facility for immunisation. In addition, in regard to the AYUSH provider, older age decreased and being a Christian increased the odds of poor health care responsiveness, and in terms of the THP, being a Sikh decreased the odds and older age, and visiting the THP for the treatment of injury/accident increased the odds of poor health care responsiveness.

Consistent with previous research,<sup>4,7,10,17</sup> we found that lower socioeconomic status and a member of a caste were associated with poor health care responsiveness. However, in our study this socioeconomic gradient was observed only

**Table 3** Crude Odds Ratios (Based on Logistic Regression) of Poor Healthcare Responsiveness of Last Outpatient Visit by Type of Health Care Provider Among Middle- and Older Aged Adults in India, 2017–2018

Variable	Type of Health Care Provider			
	All	Conventional	AYUSH	Traditional
	CrOR (95% CI)	CrOR (95% CI)	CrOR (95% CI)	CrOR (95% CI)
Type of provider				
Conventional	1 (Reference)			
AYUSH	0.76 (0.60, 0.95)*			
Traditional	0.51 (0.37, 0.69)***			
Age in years				
45–59	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
60–69	0.97 (0.82, 1.13)	0.99 (0.83, 1.17)	0.54 (0.32, 0.90)*	1.67 (0.97, 2.87)
70 or more	0.99 (0.86, 1.14)	0.98 (0.84, 1.14)	0.65 (0.38, 1.12)	2.17 (1.33, 3.59)**
Sex				
Female	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Male	0.98 (0.88, 1.10)	1.02 (0.91, 1.14)	0.77 (0.52, 1.15)	0.75 (0.49, 1.16)
Education				
No schooling	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
≥1 year	0.82 (0.73, 0.92)***	0.79 (0.70, 0.89)***	0.83 (0.61, 1.12)	0.67 (0.41, 1.11)
Socioeconomic status				
Low	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Medium	0.90 (0.80, 1.02)	0.88 (0.80, 0.99)*	0.78 (0.50, 1.22)	1.19 (0.72, 1.95)
High	0.70 (0.59, 0.83)***	0.67 (0.56, 0.80)***	0.83 (0.47, 1.47)	0.56 (0.25, 1.28)
Health insurance				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	0.90 (0.76, 1.06)	0.85 (0.71, 1.01)	0.58 (0.30, 1.12)	1.65 (0.78, 3.50)
Residential status				
Rural	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Urban	1.02 (0.84, 1.26)	0.97 (0.79, 1.20)	0.77 (0.47, 1.26)	1.67 (0.73, 3.84)
Caste status				
None	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Caste	1.22 (1.05, 1.40)***	1.65 (1.00, 1.35)*	2.13 (1.35, 3.36)***	1.73 (0.85, 3.53)
Religion				
Hindu	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Muslim	1.07 (0.85, 1.34)	1.13 (0.89, 1.45)	0.79 (0.44, 1.43)	0.49 (0.21, 1.14)
Christian	0.94 (0.66, 1.35)	0.85 (0.59, 1.23)	4.26 (1.38, 13.16)*	1.67 (0.49, 5.71)
Sikh	0.51 (0.37, 0.69)***	0.53 (0.39, 0.73)**	—	0.07 (0.01, 0.46)**
Other	0.71 (0.74, 1.15)	0.72 (0.43, 1.22)	0.34 (0.05, 2.33)	1.68 (0.26, 10.86)
Self-rated health status (poor or fair) (base=good)	1.14 (1.02, 1.28)*	1.16 (1.04, 1.29)**	1.12 (0.65, 1.92)	1.22 (0.75, 1.96)
Chronic conditions				
Zero	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
One	1.10 (0.94, 1.30)	1.14 (0.96, 1.38)	1.02 (0.71, 1.46)	1.27 (0.79, 2.06)
Two or more	1.37 (1.08, 1.72)**	1.35 (1.10, 1.65)**	0.82 (0.45, 1.52)	0.70 (0.25, 1.93)
Functional disability	1.39 (1.16, 1.66)***	1.23 (1.00, 1.51)*	2.79 (1.88, 4.15)***	3.34 (1.99, 5.60)***

(Continued)

**Table 3** (Continued).

Variable	Type of Health Care Provider			
	All	Conventional	AYUSH	Traditional
	CrOR (95% CI)	CrOR (95% CI)	CrOR (95% CI)	CrOR (95% CI)
Main purpose of visit				
Treatment for illness	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Treatment for injury/accident	1.20 (0.89, 1.57)	1.08 (0.82, 1.43)	1.44 (0.52, 3.80)	3.33 (1.40, 7.92)**
Immunisation	1.48 (1.15, 1.92)**	1.32 (1.02, 1.70)*	1.43 (0.46, 4.44)	6.95 (2.55, 18.93)***
Medical check-up	1.10 (0.82, 1.48)	1.02 (1.75, 1.40)	0.74 (0.24, 2.24)	3.79 (1.06, 13.69)*
Consultation	0.91 (0.76, 1.09)	0.85 (0.70, 1.02)	0.73 (0.38, 1.37)	1.69 (0.52, 5.54)
Time travelled ( $\geq 1$ hr) (base= $<1$ hr)	1.15 (0.97, 1.36)	1.08 (0.90, 1.30)	1.38 (0.89, 2.14)	1.73 (0.89, 3.37)

**Note:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ .

**Abbreviations:** CrOR, crude odds ratio; CI, confidence interval.

for the conventional sector, and not for the AYUSH and THP services. This result may be explained by the lower cost of consulting primarily public conventional health care, which are more likely to be utilized by poorer than richer segments of society.<sup>7</sup> Some previous research<sup>3,4,15</sup> showed an association between younger age, rural residence, female sex, not having health insurance, and difficulties with traveling time and poor health care responsiveness, but we did not find significant differences in our study.

Consistent with previous research,<sup>6</sup> we found that having two or more chronic conditions, functional disability and visiting the health facility for immunisation was associated with poor health care. However, poorer health care responsiveness for people with two or more chronic conditions was in this study only found for the conventional and not the AYUSH and THP sector, and poorer health care responsiveness for people with functional disability was in this study only found for the AYUSH and THP and not the conventional sector. This finding could mean that the conventional sector should improve health care responsiveness for people with multiple chronic conditions and the AYUSH and THP sector should improve health care responsiveness for people with functional disability. We did not find a positive association between poor or fair self-rated health and poor health care responsiveness, contrary to what was found in a study in South Africa.<sup>3</sup>

Study limitations include the self-report of the data used in this analysis, which may have biased responses, and the cross-sectional study design, which hinders us to draw causative conclusions. Furthermore, the study focused on community-dwelling middle-aged and older adults and excluded institutionalised persons.

## Conclusions

One in ten middle-aged or older adults in India reported poor health care responsiveness. Overall, factors associated with poor health care responsiveness included the conventional health care provider, lower education, lower socioeconomic status, member of a caste, having two or more chronic conditions, functional disability and visiting the health facility for immunisation. In addition, in regard to the AYUSH provider, older age decreased and being a Christian increased the odds of poor health care responsiveness, and in terms of the THP, being a Sikh decreased the odds and older age, and visiting the THP for the treatment of injury/accident increased the odds of poor health care responsiveness. The study highlights significant disparities in health systems response, such as the type of health care provider, socioeconomic and health status, which need to be addressed in order to provide good-quality health care services among the middle-aged and older population in India.



**Table 4** Adjusted Odds Ratios (Based on Logistic Regression) of Poor Health Care Responsiveness of Last Outpatient Visit by Type of Health Care Provider Among Middle- and Older Aged Adults in India, 2017–2018

Variable	Type of Health Care Provider			
	All	Conventional	AYUSH	Traditional
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Type of health care provider				
Conventional	I (Reference)			
AYUSH	0.74 (0.58, 0.93)*			
Traditional	0.47 (0.34, 0.64)***			
Age in years				
45–59	—	—	I (Reference)	I (Reference)
60–69			0.45 (0.26, 0.77)**	1.41 (0.83, 2.41)
70 or more			0.43 (0.22, 0.81)**	1.68 (1.03, 2.73)*
Education				
No schooling	I (Reference)	I (Reference)	—	—
≥1 year	0.87 (0.78, 0.98)*	0.86 (0.76, 0.97)*		
Socioeconomic status				
Low	I (Reference)	I (Reference)	—	—
Medium	0.96 (0.85, 1.08)	0.94 (0.83, 1.07)		
High	0.74 (0.62, 0.88)***	0.73 (0.61, 0.88)***		
Caste status				
None	I (Reference)	I (Reference)	I (Reference)	—
Caste	1.17 (1.01, 1.36)*	1.11 (0.98, 1.29)	2.17 (1.37, 3.45)***	
Religion				
Hindu	I (Reference)	I (Reference)	I (Reference)	I (Reference)
Muslim	1.08 (0.84, 1.40)	1.11 (0.85, 1.46)	0.78 (0.40, 1.55)	0.48 (0.20, 1.14)
Christian	0.87 (0.59, 1.28)	0.84 (0.56, 1.25)	3.77 (1.02, 13.92)*	1.91 (0.46, 7.82)
Sikh	0.52 (0.38, 0.72)***	0.55 (0.40, 0.77)***	—	0.06 (0.009, 0.43)**
Other	0.67 (0.41, 1.10)	0.70 (0.41, 1.18)	0.24 (0.03, 1.98)	2.14 (0.34, 11.93)
Self-rated health status (poor or fair) (base=good)	1.07 (0.95, 1.20)	1.08 (0.96, 1.21)	—	—
Chronic conditions				
Zero	I (Reference)	I (Reference)	—	—
One	1.09 (0.94, 1.28)	1.18 (1.00, 1.40)		
Two or more	1.38 (1.08, 1.77)**	1.43 (1.16, 1.78)***		
Functional disability	1.32 (1.11, 1.58)**	1.17 (0.96, 1.44)	3.87 (2.41, 6.21)***	3.40 (1.98, 5.84)***
Main purpose of visit				
Treatment for illness	I (Reference)	I (Reference)	—	I (Reference)
Treatment for injury/accident	1.16 (0.88, 1.53)	1.07 (0.80, 1.43)		3.11 (1.22, 7.93)*
Immunisation	1.45 (1.11, 1.96)**	1.31 (1.00, 1.71)*		8.56 (3.15, 23.27)***
Medical check-up	1.07 (0.79, 1.46)	1.03 (0.74, 1.42)		3.59 (0.84, 15.31)
Consultation	0.84 (0.69, 1.07)	0.84 (0.68, 1.03)		2.47 (0.71, 8.53)

Note: \*\*\*p<0.001; \*\*p<0.01; \*p<0.05.

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval.

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## Disclosure

All authors declare no conflicts of interest in this paper.

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