


# Providers' perspectives on the performance of primary healthcare centres in India: The missing link

Rajeshwari Bangalore Sathyananda<sup>1</sup>  | Anja Krumeich<sup>2</sup> |  
Usha Manjunath<sup>3</sup> | Angelique de Rijk<sup>4</sup> | C. P. van Schayck<sup>5</sup>

<sup>1</sup>Department of Primary Care, CAPHRI, Maastricht University, Maastricht, The Netherlands

<sup>2</sup>Department of Health Ethics and Society, Research Institute CAPHRI, Maastricht University, Maastricht, The Netherlands

<sup>3</sup>Institute of Health Management Research, Bengaluru, India

<sup>4</sup>Department of Social Medicine, Research Institute CAPHRI, Maastricht University, Maastricht, The Netherlands

<sup>5</sup>Department of Primary Care, Research Institute CAPHRI, Maastricht University, Maastricht, The Netherlands

## Correspondence

Rajeshwari Bangalore Sathyananda, No 112, 5th Cross, Swathi Road, Vallabha Nagar, Doddakallasandra Post, Bengaluru, Karnataka 560062, India.  
Email: [bs.rajeshwari@maastrichtuniversity.nl](mailto:bs.rajeshwari@maastrichtuniversity.nl)

## Funding information

EP-Nuffic Netherlands, Grant/Award Number: CF11830

## Abstract

**Background:** Primary healthcare centres (PHCs) form the foundation of the Indian public health system, and thus their effective functioning is paramount in ensuring the population's health. The World Health Organisation (WHO) has set six aspects of performance assessment for general health systems, which are hardly applicable to the PHC setup in a low- and middle-income country. The Primary Health Care Performance Initiative (PHCPI) has prescribed a framework with five domains consisting of 36 indicators for primary healthcare performance assessment from a policy point of view. For the assessment to be realistic, it should include inputs from stakeholders involved in care delivery, so this study examines the perspectives of healthcare providers at PHCs in India.

**Methodology:** The authors used qualitative research methodology in the form of responsive evaluations of healthcare provider's interviews to understand the indicators of PHC performance.

**Results and Conclusion:** The study results showed that healthcare providers considered efficient teamwork, opportunities for enhancing provider skills and knowledge, job satisfaction, effective PHC administration, and good

This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2021 The Authors. The International Journal of Health Planning and Management published by John Wiley & Sons Ltd.

community relationship as PHC performance assessment. These domains of performance could be considered the 'missing link' in PHC assessment, since they are deemed important by providers and did not coincide with the WHO aspects and the PHCPI performance assessment framework.

#### KEYWORDS

developing countries, healthcare provider's perspective, primary health centres, performance assessment, Primary Health Care Performance Initiative (PHCPI)

## 1 | BACKGROUND

Various factors have contributed to increased life expectancy in India, a few of which are education, policy changes and growing awareness about health. One of the many factors that contributed to this improvement is the implementation of a multipronged approach concerning healthcare education and promotion, preventive healthcare programmes, along with the provision of curative services through clinics known as Primary Healthcare Centres (PHCs).

India's commitment to primary-care dates back to preindependence (1920s), which over the years has been strengthened by policies and programmes to address health and its related social determinants.<sup>1,2</sup> Even with these efforts, India has fallen short of achieving the United Nations Millennium Development Goals, like other low- and middle-income countries (LMICs).<sup>3-7</sup> Now India is committed to full implementation of the Sustainable Development Goals in all its public programmes.<sup>2,8</sup> To achieve better health of the population, a well-performing health system is essential, hence PHC performance assessment is vital for India.

PHCs form the foundation of the public health system in India. As per the norms of Indian Public Health Standards, PHCs are responsible for the health of specific populations of 30,000 citizens, and thus form the critical component of care at the grassroots level.<sup>9</sup> There are two types of PHCs, categorised by working hours and service provisions: the 24/7 PHCs providing services like baby delivery at any time of the day or night, and the non-24/7 PHCs. In general, the 24/7 PHC has doctors, nurses, pharmacists, laboratory technicians, optometrists, health assistants and other noncare provider staff (clerks and cleaning staff), which are managed by an Administrative Medical Officer. Organisationally, each PHC has five to eight subcentres for a group of villages, and each subcentre is served by Junior Health Assistants who handle a population of 5000, primarily providing health education and preventive health care.<sup>9</sup> Considering the importance of well-functioning PHCs in ensuring the health of the population, the monitoring and performance evaluation of these centres is significant. However, research on how well these PHCs are performing has not been carried out. Therefore, such studies must be undertaken to better understand PHCs and for establishing performance benchmarks.<sup>10</sup>

Although the World Health Organisation (WHO) has developed aspects for performance assessment of healthcare systems, critical domains of performance with indicators that could be used for assessing the daily performance of PHCs have not been specified.<sup>11,12</sup> The six aspects in the WHO health system performance assessment consist of overall level of health, distribution of health in population, overall level of responsiveness, distribution of responsiveness, distribution of resources, distribution of financial contributions.<sup>10-12</sup> The WHO aspects are applicable to health systems as a whole and not in particular to healthcare facility, such as PHCs in India and other LMICs.

The Primary Health Care Performance Initiative (PHCPI), a group consisting of the World Bank Group, the WHO, the Bill and Melinda Gates Foundation along with other academic institutes and universities, which is working in the LMICs has recently stipulated two sets of performance indicators.<sup>13</sup> The initiative prescribed five

**TABLE 1** Primary Health Care Performance Initiative's framework with vital domains and performance indicators

Sl no.	Domain	Subdomain	Indicator
1	System level determinants	Health financing	Per capita primary healthcare expenditure
2	Inputs	Drugs and supplies	Basic equipment availability Availability of essential drugs Availability of vaccines Facilities with clean water, electricity, sanitation
		Facility infrastructure	Health centre and health post density
		Workforce	Community health workers, nurses and midwife density
3	Service delivery	Access	Access barriers due to treatment costs Access barriers due to distance
		Availability of effective primary healthcare services	Provider absence rate Diagnostic accuracy Adherence to clinical guidelines Daily caseload per provider
		High quality primary healthcare	Dropout rate first to third DPT3 vaccination Dropout rate first to fourth antenatal visit Treatment success rate for new TB cases Care-seeking for symptoms of pneumonia
4	Outputs	Effective service coverage	Demand for family planning satisfied with modern methods Antenatal care coverage Skilled birth attendance DTP3 immunisation coverage Children with diarrhoea receiving appropriate treatment TB cases detected and cured People living with HIV receiving ART ITN coverage for malaria prevention Cervical cancer screening rate Hypertension control Diabetes mellitus control
5	Outcomes	Health status	Maternal mortality ratio Adult mortality from NCDs Under five mortality rate Neonatal mortality rate
		Equity	Difference between first and fifth wealth quintiles for under five mortality

domains with 10 subdomains and 36 indicators which would be used from a policy point of view; Table 1 provides details of these domains and indicators.

Although the PHCPI focuses on PHCs in LMICs, it does not take into consideration that each country organises its healthcare system in its own particular way, shaped by culture, history and available resources. Performance assessment should be attuned to these local conditions. A way to take this local context into consideration in PHC assessment is to integrate the perspectives of local stakeholders on what a PHC is supposed to do and how it is supposed to function. These perspectives should then be translated into domains for performance indicators<sup>14</sup> and added to performance indicators of more formal assessment models identified in our literature review to benefit from mixed research methods.

According to Guba and Lincoln, effective performance assessment should be context-sensitive, hence including all stakeholders would expand it to include underlying expectations, experiences and personal backgrounds, culture, education, and socioeconomic status, in turn making the domains of performance and indicators more acceptable and accurate.<sup>10,15</sup> This study explores therefore the perspective of an important stakeholder group, the PHC healthcare providers on the matter of performance, thus including their daily and operational issues, which are specific to the Indian context. Including domains of performance and indicators based on the perspective of healthcare providers helps to enable assessment of the actual functioning and effectiveness of urban PHCs, which formed the objective of our study. The research questions addressed in this study are:

- What are the domains of PHC performance that can be inferred from the providers' perspective?
- How can these domains strengthen the existing WHO aspects and PHCPI performance assessment framework with respect to PHC assessment?

## 2 | METHODOLOGY

The authors used qualitative research methodology to conduct in-depth interviews with healthcare providers at PHCs to elicit implicit and explicit domains of PHC performance and understand their thoughts about the actual performance of their own PHCs.

### 2.1 | Study design

In-depth interviews were conducted by the first author in person to understand providers' perspectives on what constituted PHC performance. The interview guide used in this study was dynamic and encouraged the providers to describe how they experienced their daily work, including interaction with patients and colleagues, the community, along with the role of the PHC in the overall health system and the health of the population. This allowed us to identify what providers expected of a PHC and, indirectly, what kind of indicators they used when assessing its performance.

### 2.2 | Study setting and context

This study was conducted in three 24/7 PHCs in the Bengaluru urban district of Karnataka state, India. The quality and quantity of services at PHC have been classically measured by the number of women who delivered babies at the PHC; hence this criterion was considered as one of the PHC performance indicators.<sup>2</sup> The Bengaluru urban district has 20 24/7PHCs. Among these, the study included PHCs that had the highest, medium and lowest number of deliveries in relation to the total population served by PHCs in the financial year from April 2016 to March 2017. This theoretical sampling approach was used to include a wide spectrum of urban PHCs in terms of

performance. The PHCs selected were PHC-1 (population: 56,081), PHC-2 (population: 48,037) and PHC-3 (population: 54,513).

## 2.3 | Study participants

All the healthcare providers working (doctors, nurses, health assistants, pharmacists, laboratory technicians and optometrists) in the three PHCs were included in the study. All the healthcare providers, who were contacted in the PHCs agreed to participate in the study and the interviews were conducted between September 2017 and February 2018. Table 2 describes the study participants and their characteristics. Fifty-one healthcare provider positions were approved by the government in these three PHCs, nevertheless 26 of these positions were vacant, a nearly 50% vacancy rate. In order to overcome this shortage of providers, staff (1 doctor and 11 nurses) were recruited yearly on a contractual basis. Table 3 shows the availability of PHC providers.

## 2.4 | Data collection

The interviews were conducted at PHCs in the local language to help participants express themselves freely and communicate well. The interviews lasted for about an average of 45 min. The providers were asked to describe their performance, the performance of their colleagues, and that of the PHC they work in. They were encouraged to describe their views on what they considered as demonstrating effective performance at the PHC. This unstructured open method of interview stimulated them to reflect on their education, work life, personal life, interpersonal interaction, among other factors, thereby allowing them to articulate on an assessment indicator that was usually explicit, but sometimes an implicit domain. These explicit and implicit domains and indicators were analysed to understand the providers' view on PHC performance.

## 2.5 | Ethics

In line with research ethics principles, this study was conducted after receiving clearance from the Ethics Review Committee of Manipal University, Manipal, India. Participants' written informed consent were obtained before each

TABLE 2 Characteristics of the study participants

Personnel	Gender		Age in years			
	Male	Female	<29	30–39	40–49	>50
Doctors	2	2	0	1	2	1
Nurses	0	11	2	6	2	1
Pharmacists	0	3	0	1	1	1
Lab technicians	0	2	0	2	0	0
Optometrists	2	0	0	0	0	2
Health Assistants <sup>a</sup>	3	11	0	7	1	6
Total interviewed (36)	7	29	2	17	6	11

<sup>a</sup>Abbreviation: Male/female and senior/junior.

TABLE 3 Availability of healthcare providers in the PHCs

Staff cadre (involved in patient care)	Approved	Working	Vacancy
Doctor	6	3	3 <sup>a</sup>
Nurse	7	0	7 <sup>b</sup>
Pharmacist	3	3	0
Laboratory technician	3	2	1
Ophthalmic technician	3	2	1
Senior health assistant male	3	1	2
Senior health assistant female	3	1	2
Junior health assistant male	10	1	9
Junior health assistant female	12	12 <sup>c</sup>	0
Block health education officer	1	0	1
Total healthcare providers <sup>d</sup>	51	25	26

Abbreviation: PHC, primary healthcare centre.

<sup>a</sup>One doctor employed on contractual basis to overcome shortage.

<sup>b</sup>Eleven nurses employed on contractual basis to overcome shortage.

<sup>c</sup>One person was on long study leave hence was not interviewed.

<sup>d</sup>See text for explanation.

interview, thus ensuring voluntary participation, confidentiality, and the freedom of participants to exit the study at any point in time. The consent form that was used for the study also included the details about the researchers as well as the objectives of the study.

## 2.6 | Data analysis

Personal details of the interviewees were removed from the recorded interviews to ensure confidentiality. The recorded interviews were translated into English and transcribed. The study participants were contacted only once during the study and were not provided with the transcripts for clarification, so as not to interfere in their service at PHC and also not to burden them. The data were analysed by the first author using Atlas-TI software following the method of thematic analysis to develop primary and secondary codes to identify various themes arising from the providers' perspectives.<sup>16</sup>

## 3 | RESULTS

Interview data from 36 healthcare providers (24 regular and 12 contractual) at the three PHCs was analysed and two categories of performance domains from the providers' perspectives were identified. One category refers to performance indicators mentioned by the care providers that overlap with domains and indicators in the WHO aspects and the PHCPI performance framework. The other category refers to five domains that the providers came up with that were indicative of PHC performance and external to the WHO framework. These domains were teamwork, opportunities for growth and development provided by acquiring skills and knowledge, job satisfaction, administration leading to the perception of safety and secure work environment, and good community relations developed through positive perceptions by patients and the community.

### 3.1 | Domains in alignment with the WHO performance assessment aspects

The providers described numerous domains that were in line with the aspects of the WHO framework:

1. Overall levels of health: The fulfilment of this aspect of the framework was revealed by general health indicators like maternal mortality ratios and infant mortality rates. Providers explained that they had the responsibility of delivering effective maternal and child healthcare, as well as meeting targets in the prevention and treatment of prevalent diseases, under various national programmes delivered in the field and at PHCs, contributing to better overall levels of health in the population (Table 4, SI no. 1).
2. Distribution of health in the population: This aspect of the WHO's performance parameters was evaluated and commented upon by most providers. The PHCs and their subcentres were all structured to ensure the distribution of services in the community to improve health of the population. The providers mentioned healthcare promotion and preventive health services among the community as a major area of PHC performance. This aspect incorporated components such as immunisation coverage, monitoring child growth, prenatal and natal care, contraception, noncommunicable disease screening, mosquito larvae surveys to reduce vector-borne diseases, collecting sputum and blood smear samples to prevent tuberculosis and malaria, and health-awareness programmes (Table 4, SI no. 2).
3. Overall level of responsiveness: According to the providers, this WHO criterion consisting of quality of care and client satisfaction, involved the ability of the PHC to meet and exceed patient expectations. The providers expressed that client satisfaction was always expressed by the patients after care delivery and hence should be considered in PHC performance (Table 4, SI no. 3).
4. Distribution of responsiveness: One of the WHO's performance parameters is availability of resources. The providers assessed this parameter as nonvacant positions, and the availability of infrastructure.

Vacant provider positions at PHCs: All respondents expressed concern about the number of vacant posts in PHCs. All the providers stated that the lack of skilled workforce had led to an increase in the workload for all of them, forcing them to multitask and perform multiple roles. As a result, they were struggling to provide quality care, leading to agitation and sometimes growing friction between providers and patients. It was also observed that the population served by the PHCs was high in comparison to the standard of 30,000 persons per PHC, thereby aggravating the problem. Hence, providers considered the availability of staff members or rather the number of vacant positions as PHC performance (Table 4, SI no. 4a).

Availability of medicines at PHCs: Providers said that the availability of medicines and other items for patient care was a responsibility of the health system and the duty of the pharmacist, who was responsible for all the stocks in the PHC. The lack of supplies added to the burden of the Administrative Medical Officer, thereby affecting quality of care. The interviewed providers considered availability of medicines as part of PHC performance (Table 4, SI no. 4b).

5. Distribution of resources: Distribution of human and other resources across the health system could not be adequately assessed because administrative officers and personnel from the government who are in charge of these PHCs were not included in the study. This was out of the scope of the present study.
6. Distribution of financial contributions: The governmental health budget was the only criterion from the WHO's framework that is applicable to PHCs. The budget was allocated for the salary of human resources, infrastructure procurement and maintenance, and provision of healthcare. Providers expressed that the budget allocation and remuneration for the services were not provided on time affecting their abilities to lead a decent life, thus including this factor in PHC performance (Table 4, SI no. 6a, b).

TABLE 4 Quotes supporting domains that are in alignment with the WHO performance assessment aspects

SI no.	Aspects of performance	Quotes
1	Overall levels of health	We provided OPD [outpatient department] services, antenatal care, post-natal care, birth services... 0 to 5 years' children health...report birth and death... diagnose and treat TB [tuberculosis] and malaria (comments from a doctor)
2	Distribution of health in the population	First dose and second doses of TT [anti-tetanus toxoid injections] are given. Then they [health assistants] give all the information about the government hospitals closeby, they inform who the doctor is... Postpartum care visits at home are done by sisters [health assistants]; the sisters give all the information needed, then every Thursday for children they provide immunisation in all four subcentres for maximum coverage in minimum time. (Comments from a doctor)
3	Overall level of responsiveness	If OPD [outpatient department and services] starts in the morning until the evening, it will go on ... we [providers] can't sit and talk that much as the patient load is high ... many people are happy with the treatment. Many of them have said so and thanked me as they got treated (comments from a nurse)
4	Distribution of responsiveness	(a) [There is] no LHV [lady health visitor, local dialect for senior health assistant female] and no BHEO [block health education officer] ... everything sisters [junior health assistants] only should do (comments from a doctor)  (b) If something [medicine and other medical supplies] is not available, [the] doctor will get it for us... Pharmacist will not get the things for us ... but he [doctor] will get it from somewhere (comments from a nurse)
5	Distribution of resources	Not applicable
6	Distribution of financial contributions	(a) We don't get funds on time ... now they [government] are giving [it] on a performance basis. And we don't know on what performance basis they are calculating the amount ... for [the] lab we don't get anything from the government... still we have to deliver services" (comments from a doctor on fund allocation)  (b) ... wherever we go [any PHC], the major problem is salaries; we can't expect [our] salaries on time... (comments from a health assistant on salary allocation)

### 3.2 | Domains in alignment with the PHCPI framework of performance assessment

The providers mentioned indicators from all subdomains except access, availability of effective primary healthcare, and equity, as they were concerned from the system point of view. Though the indicators mentioned were in line with the PHCPI framework, they were mostly applicable to the centre and not for the complete primary healthcare system as designed by the PHCPI.

### 3.3 | Domains defined by the interviewed providers but external to the WHO aspects and the PHCPI performance framework

In addition to the indicators that were mentioned in the WHO's performance framework, five domains were identified by the providers which, in their view, were essential components of PHC performance. These domains of



performance included teamwork, opportunities for skill and knowledge advancement, job satisfaction, PHC administration for safety and security and positive community relationships.

### 3.3.1 | Theme 1: *Teamwork at the PHC is central to performance*

All providers identified teamwork as a key element in the performance of a PHC, stressing that the lack of good teamwork led to the poor functioning of the centre. Therefore, teamwork itself is a performance criterion (Table 5, SI no. 1).

The interviewed providers acknowledged that effective teamwork was based on the presence of doctors with suitable skills, and coordination and cooperation among various stakeholders.

#### ***Skills and capabilities of PHC doctors***

The interviewed providers said that it was important that an adequate number of doctors were available in PHCs, and that those doctors needed to demonstrate administrative abilities, leadership and communications skills, and the right attitude towards other stakeholders. Considering all these qualities, the interviewed providers identified the availability of a good doctor as a PHC performance indicator.

**Administrative abilities:** All of the interviewed providers identified the fact that the doctors not only played the role of healthcare providers but that they also acted in an administrative capacity and a significant portion of doctor's time was allocated to the administration of the PHC. Administration consisted of ensuring the efficient functioning of the PHC, including managing materials and people, among other roles (Table 5, SI no. 1Aa).

**Leadership skills of doctors:** Interviewed providers identified doctors as the leaders of the PHCs, with all other staff reporting to them. Doctors also represented their PHC (and its staff) before higher officials. Providers stated that, given doctors' crucial role, they needed to have the following abilities: communication and coordinating skills; the ability to support staff psychologically and boost performance; and the presentation skills to represent the PHC before other stakeholders (Table 5, SI no. 1Abi–iii).

**Teaching and Training of various personnel:** The interviewed providers said that teaching and training various personnel, providing technical support, mentoring and handholding other personnel for better healthcare delivery were doctor's task, who were best qualified in the PHC team; thus, forming an ideal domain of performance (Table 5, SI no. 1Ac).

**Attitude of doctors towards other providers and patients:** The providers said that the attitude of providers and patients towards each other were essential for the PHC performance. Any evaluation had to take into account whether the professionals involved had a positive and empathetic approach; whether they were dedicated to patient care; whether the doctors recognised, appreciated, and respected all the individuals contributing to patient care. All these accounts facilitated conducive work environment and better service delivery, consequently the attitude of doctor towards providers and patients were considered as PHC performance (Table 5, SI no. 1Adi–iii).

#### ***Coordination and cooperation between different stakeholders***

**Intradepartmental cooperation and coordination:** According to the providers, healthcare is not just the responsibility of one healthcare provider. In fact, healthcare provision involved the interaction of various internal, external factors and stakeholders, including the prevailing environment in a society. Cooperation and coordination within the department created a supportive administrative environment, prompt and efficient service delivery, and synergy between personnel, all influencing the PHC performance (Table 5, SI no. 1Ba).

**Interdepartmental cooperation and coordination:** According to the interviewed providers, the health of the local population is influenced by sanitation or lack thereof, clean water provision, clean air, appropriate town

**TABLE 5** Quotes regarding domains and subdomains defined by the interviewed providers that are external to the WHO aspects and the PHCPI performance framework

SI no.	Domain	Subdomain	Quotes
1	Teamwork at the PHC is central to performance	A. Skills and capabilities of PHC doctors	<p>I tell my staff that this [delivery services at the PHC] is [based on] teamwork and this [PHC] is like our family (comments from a doctor)</p> <p>(a) Administrative abilities: If you [doctor] don't know the administrative work, they [other stakeholders] will take you for a ride. (Comments from a doctor)</p> <p>(b) Leadership abilities:</p> <p>(i) When you [doctor] talk to them, they feel very happy and follow treatment (comments from a doctor referring to communication with patients)</p> <p>(ii) [If there are] any problems, seniors [higher officers] will be with us, any problem arises in hospital premises I always call the seniors to inform them and they do support. (Comments from a doctor referring to coordination with higher officials)</p> <p>(iii) Anything [local administrative matters with leaders] is there I call local leaders and they call me too [for direct communication]. (Comments from a doctor referring to communication and coordination with the local leaders)</p> <p>(c) Teaching and training of various personnel: Whatever problem happens, adverse drug reactions or anything else, we will immediately call the doctor ... if it is risky, on the phone the doctor will instruct and guide us. (Comments from a nurse)</p> <p>(d) Attitude of doctors towards other providers and patients:</p> <p>(i) "Basically, I'm very sensitive. I will not do anything intentionally to hurt someone. One day, without knowing [it], I took the pen, which was on the table to write the report, ... that day she [the doctor] scolded me..." (comments from a health assistant on positive empathetic approach)</p> <p>(ii) I'm interested in working here, madam. While I'm here I forget outside things. I don't worry about family and all that. Until evening, I'm right here. Sometimes I'm here till 8 or 9 in the evening. (Comments from a doctor on dedication towards patient care)</p> <p>(iii) They [doctors] say so many deliveries happened in 'ABC' PHC, but no one appreciates how much effort we need to put to achieve that, including higher officers [doctors and other senior officers]. (Comments from a health assistant on recognition by senior officers)</p>

TABLE 5 (Continued)

Sl no.	Domain	Subdomain	Quotes
2	Advancing skills and knowledge	B. Coordination and cooperation between different stakeholders	<p>(a) Intradepartmental cooperation and coordination: People working with me should cooperate well with me. Doctors will cooperate nicely, and if colleagues working here adjust nicely, it will be good... [some colleagues are not cooperative] (comments from a health assistant)</p> <p>(b) Interdepartmental cooperation and coordination: When we go to the field, [a] major problem is drainage systems. People don't keep clean and scold us in turn for lack of water and poor drainage. (Comments from a health assistant)</p>
3	Job satisfaction		<p>(a) Here I am feeling good and able to learn new things ... In PHCs we can't learn much [opportunities for skill and knowledge advancement is limited]. When we work in a different, higher-level hospital, like general hospitals, we get to learn more (comments from a doctor regarding on-the-job learning opportunities)</p> <p>(b) I want to do a post-graduation by government service quota ... I want to continue with the government service. (Comments from a doctor on higher education)</p>
4	PHC administration in relation to safety and security standards		<p>(a) I have satisfaction [in] helping the poor, giving service to them. If they go to [a] private facility ... [just for] for IV fluids, they charge XXX rupees. So, it will help the poor people here [by saving money] (comments from a doctor on serving poor patients)</p> <p>(b) If delivery happens very well, I feel satisfied. If [the] mother and child are fine, [then] it's enough — that gives satisfaction ... they should go home well. That's enough, madam. I will not ask [for] anything more. (Comments from a nurse on serving women and children)</p>
4	PHC administration in relation to safety and security standards		<p>(a) We can inform our doctor, but when we do that they will say 'why did you take a chance with such cases?' (comments from a nurse on doctor's reaction)</p> <p>(b) I feel [that] if we have security staff, then it will be good. But some people can thrash the security [people] also.... those kinds of people are also there. (Comments from a nurse)</p>

(Continues)

TABLE 5 (Continued)

Sl no.	Domain	Subdomain	Quotes
5	Positive community relations	A. Relationships with people in the PHC and the community	<p>(c) Going to villages only is a challenge, madam. It will be far away, we won't have bus facility, it will be around 2–3 km, thieves have snatched the chains, it has not happened to me, but it has happened to others in some other route. (Comments from a health assistant on security in field)</p> <p>(d) They keep knocking the door of the PHC. If we say we won't open the door at night [and that] we see only pregnant and accident cases at night, they will say, 'call the president [local elected leader to complain].... oh, you won't give [an] injection to me; I will see you in the morning,' we will listen and keep quiet. [We] don't know if they are drunk or not; we need to face such things. (Comments from a nurse)</p> <p>(a) Sometimes they [patients] will come and ask 'give me [an] insulin injection' ... they should come with an open mind. If they tell their problems, we can give [them a] treatment. Instead, they come and say what their problem is and ask for the medicine directly.... Then they won't sit [down] even though we have put chairs for them... I ask them to come one by one also [patients will come into my room and stand], they won't listen. ... everybody wants to be treated immediately [that is, without considering their fellow patients]. ... [A few] people won't even understand what we advise... as soon as we give [them] medicines, patients expect to be cured immediately." (comments from a doctor)</p> <p>(b) People are different from one place to another. When we say something [relating to health education] ... some people take it as positive, some people fight with us (comments from a health assistant)</p> <p>(c) Just recently there was an infant death. They took patient to 'XYZ' hospital and that madam [doctor] said something and did [an] operation. We could have done [a] normal delivery, but they operated on her. [The] baby was not saved, [and] they blamed us for everything.... they created a big fight [and] they closed the hospital gate. ... they said she [the nurse] did not do [care] correctly.... No one supported [colleagues, local leaders or public]. That time, even our doctor got beatings in the office room. There are such kinds of people. It is very difficult, madam. Panchayat members [local elected members] will take people's side during such situations. (Comments from a nurse)</p>

TABLE 5 (Continued)

SI no. Domain	Subdomain	Quotes
		<p>(d) See, there is one mental [person with psychiatric problem, pointing to a cleaning staff member] here. He is listening to what we are talking [about]. He is problematic. What to do? We can't look anywhere. He feels we are making fun of him and talking about him. ... this one guy is sick. He will go to hit the doctor only. (Comments from a nurse)</p>
	<p>B. Cooperation and coordination with local leaders and private players were considered important by the providers</p>	<p>(a) We have given the letter for construction, after demolition [of an old building on the campus]; if MLA [member of legislative Assembly] releases the funds faster, it [construction] can happen.... political influence is more here.... if the 'CCC' [a political party] does it, 'BBB' [another political party] will not tolerate [it]; they will poke their noses [into it] and say they [politicians] will eat money.... that's why building has not started. (Comments from a doctor)</p> <p>(b) They [patients] will come and tell 'we are members of zilla-panchayath [locally elected body]. [and so on] ... they come and interfere with our work, like asking [that they are allowed] to handle patients which we cannot handle.... sometimes they pressure [us] into doing things like normal delivery only [in complicated cases] (comments from a nurse)</p> <p>(c) Our vehicle [experienced problems] when we were doing MR (measles-rubella) vaccinations. We called gram-panchayat members [locally elected persons]; if it's possible they will arrange [for a car] ... we ask local people for assistance, [everyone] cooperates with us. (Comments from a health assistant)</p> <p>(d) They took the patient to 'XYZ' hospital and that, madam, said something; they did [the] operation.... we could have done [a] normal delivery, but they operated on her; [the] baby was not saved [and] they blamed us for everything. They said she [the nurse] did not do it correctly. (Comments from a nurse)</p>

planning among other factors. Improvements in such basic needs can be achieved through coordination of various departments, leading to optimum standards of living. Achieving synergy between respective departments is critical to promoting better health, so providers included this synergy as a key performance indicator (Table 5, SI no. 1Bb).

### 3.3.2 | Theme 2: *Advancing skills and knowledge*

Providers interviewed acknowledged that advancing the skills and knowledge of those providing medical services was an important component of PHC performance. It was important to increase the capacity of PHCs and expand the scope of service availability, thereby leading to better health outcomes. On-the-job learning opportunities at PHCs was limited, as PHCs provide only primary healthcare and refer complicated cases to hospitals and other care facilities. The interviewed providers said that the government does offer opportunities for higher and continuing education thereby contributing to personal growth and career advancement, further improving availability and quality of health care. Hence, the opportunities provided for advancing skills and knowledge were also considered as PHC performance (Table 5, SI no. 2a, b).

### 3.3.3 | Theme 3: *Job satisfaction*

Providers described a well-functioning PHC as offering opportunities for workers to experience job satisfaction, motivating them to perform better, engage their conscience and contribute to their well-being. The providers described their job satisfaction as the gratification derived from providing services to patients in need, as well as to women and children. Hence, providers considered job satisfaction as an indicator of PHC performance (Table 5, SI no. 3a, b).

### 3.3.4 | Theme 4: *PHC administration in relation to safety and security standards*

The interviewed providers said that PHC performance was also measured as to whether staff felt secure during work. If staff security was threatened, providers were not encouraged to take risks and were reluctant to handle high risk cases. Providers said that during the day, people and local leaders gather to argue and to harass staff, including doctors. Security was not only a concern in the PHC but also in the field. Poor security and safety standards prevented staff from operating at their best, so the PHC administration in relation to staff safety and security was also considered an element of PHC performance (Table 5, SI no. 4a–c).

Providers explained that during the night, there were no security staff employed by the government or locally recruited by the PHC. This was a huge challenge because nurses were exposed to violence or were often frightened when an agitated mob gathered following a provocation or an untoward incident (Table 5, SI no. 4d).

### 3.3.5 | Theme 5: *Positive community relations*

From the providers' perspectives, the attitude of people and the various stakeholders towards healthcare and healthcare providers was a fundamental factor when assessing the PHC performance. Positive community relations were established during the process of service delivery, which needed considerable time, commitment, and patience during care. According to the providers, positive community relations reduced the risk of violence towards doctors. Good relationships with patients and the community also resulted in reasonable expectations from the centres and appropriate coordination and cooperation with local leaders and private players. Positive community relations also provided a conducive PHC environment, improving patient and provider satisfaction, directly affecting PHC performance.

### ***Relationships with people in the PHC and the community***

Providers expressed that expectations and prejudice from patients was a major factor influencing their interactions with patients. The comments from the providers revealed that patients were often prejudiced about care provided in government facilities, with skewed expectations from government doctors. PHC providers said that patients were rude and came with predetermined ideas about the necessary treatment to be provided to them, thereby hindering personnel from delivering optimal care (Table 5, SI no. 5Aa).

When health assistants visited homes in the community, it was difficult to predict people's response to the preventive care delivered as part of their work and some would behave disrespectfully. As these responses from patients and the community hindered care delivery, good relations alone would improve quality of care and so they were included as a domain of good PHC performance (Table 5, SI no. 5Ab).

Providers described that doctors were often victims of violence from patients and other staff. They also said that good relationships with the community would lead to smoother care provision, whereas aggression and violence disrupt care and demotivates providers. Hence safety was also considered a valid measurement in PHC performance assessment.

One of the interviewed providers described how certain situations arose. According to this provider, relatives of patients sometimes gathered a crowd in the community to question or confront doctors about the treatment that had been provided. The instigators of these confrontations often acted without considering how events had unfolded and often did not consider the condition of the patient when he or she had been brought to the PHC; sometimes these events were instigated by people with other interests, such as those cared for in private hospitals (Table 5, SI no. 5Ac).

Providers also mentioned in their interviews that violence did not come exclusively from patients and the community at large, but also sometimes other care providers or support staff members behaved violently with colleagues, upsetting the work environment. Good relationships with the community and among care providers could theoretically avoid these incidents of violence, so this was also added as feature of PHC performance (Table 5, SI no. 5Ad).

### ***Cooperation and coordination with local leaders and private players were considered important by the providers***

The providers highlighted that the presence and participation of local leaders in the PHC governance facilitated the identification of infrastructural needs and offered local support, thus enhancing the PHC's performance. Political interference by local leaders, their families and friends, and outlaws was a challenge because of their private interests and irrational expectations about what the PHCs could accomplish. Cooperation and coordination with local leaders were also considered as performance of PHC (Table 5, SI no. 5Ba–c).

Interviewed providers mentioned also that private doctors spread rumours about government facilities, giving patients incorrect or misguided information and leading them to seek services from private centres, all of which damaged the reputation of PHCs. Therefore, good relationship with private healthcare providers was considered as indicator of PHC performance (Table 5, SI no. 5Bd).

## **4 | DISCUSSION**

This study aimed to explore the performance of PHCs in Bengaluru urban district, from the providers' perspectives and compare them with the WHO aspects and the PHCPI performance assessment framework. The thematic analysis of the inputs from 36 providers of three PHCs resulted in domains that overlapped with some components mentioned in the WHO's aspects and the PHCPI framework. However, providers also added a significant number of

performance domains that were not part of either the WHO aspects or the PHCPI performance assessment framework. Many of these performance domains all involved or were related to the work environment in one way or the other. They included feeling part of a well-functioning, well-led team; the functioning of the team; opportunities for professional growth and development; job satisfaction; good rapport with the community, and a safe environment to work in.

The providers' focus on the work environment underscores studies that link work environment to healthcare performance in a number of ways.

First of all, several studies show how quality of the working environment impacted turnover and workforce retention, leading to understaffing and poor healthcare delivery.<sup>17–20</sup> Other studies show a similar trend when they depict healthcare workforce development as an established investment strategy for improving employee retention and service delivery.<sup>21,22</sup> Providing opportunities for staff to advance their skills and knowledge by training and furthering education results in improvements in the health of the population, hence being an excellent criterion for assessing performance.<sup>23</sup>

Second, it has been well-established in high-income countries that health systems should invest in providers, who are also referred to as internal customers. Addressing the gaps identified by these providers themselves, giving them voice, building trust and caring for them would positively impact patient care as well.<sup>24,25</sup> This is in line with studies that have reported that the satisfaction and motivation of internal customers accounted for better care delivery and patient satisfaction.<sup>26,27</sup>

Third, research has shown that job satisfaction positively influenced patient satisfaction, enhancing the care provider's feeling of achievement and being an essential component of performance assessment.<sup>28–30</sup> In addition, job satisfaction and positive dynamics among providers are linked as factors contributing to employee retention, further facilitating better provider–patient relationships and better quality of care.<sup>28,31</sup>

Finally, researchers reported increased violence against doctors and other healthcare professionals that has been increasing in both developing and developed countries.<sup>32–37</sup> This violence is a reflection of the dysfunction of the health system which increases psychological distress among providers and worsen their performance. However, when trust is established, it results in higher patient satisfaction.<sup>38–41</sup>

This literature on work environment and performance show that the domains of performance brought up by the providers can and should be taken seriously. However, they first need to be translated to indicators. These indicators should be included in PHC performance assessment in the Indian context. Not only because they help to take an important internal PHC customer seriously, and help adapt performance assessment to the Indian context, but also because literature ascertains that the domains are indeed important for health and performance. These domains, when included in the WHO aspects and PHCPI performance assessment framework, and when translated to indicators that can be quantified, will lead to improved PHC performance assessment, which will be more relevant to the Indian setting.

In light of research that has demonstrated that the technical content of training and education contributed to better patient care,<sup>42–44</sup> it was a surprising to find that no provider mentioned the technical skills or knowledge of doctors or other healthcare providers as a domain of performance. It seemed providers simply assumed that they had the necessary technical knowledge and healthcare skills essential for patient care. Yet there is also literature in general healthcare or in primary healthcare delivery<sup>45,46</sup> that shows that as long as health professionals share information on achievement of health outcomes, demonstrate awareness of patients, show commitment, integrity, and authenticity, their technical skills and knowledge are never commented on. Moreover, medical personnel who demonstrate the appropriate attitude contribute to better patient outcomes.<sup>23</sup>

### ***Central role of doctors in the PHC***

Another surprising finding was that providers placed a great deal of responsibilities on doctors, while doctors themselves also expected to fulfil these roles. The doctor was seen as central to the performance of the PHC as a



team leader, administrator, supervisor, mentor, coordinator and manager. Apparently, according to the providers, the doctor's ability to fulfil these roles forms the basis of the PHC's performance.

This focus on the doctor as central to the functioning of their PHC maybe be explained by the glorified status of doctors in India.<sup>47,48</sup> In addition to health education, preventive healthcare and curative healthcare delivery, these additional tasks described by providers place excessive strain on doctors, especially if there is one single doctor working in a particular PHC, which was the case in most of the centres included in the study. This can explain the low motivation for persons to seek work in primary care that lack basic amenities further deterring doctors. Disincentives have further complicated the problem of shortage of doctors in Indian primary care.<sup>49</sup> The multiple roles required from PHC workers only accentuate the challenges of recruiting and retaining doctors for PHCs.

## 5 | CONCLUSIONS

This study applied a qualitative research approach using a responsive evaluation method to explore PHC performance from the providers' perspective. The authors interviewed providers in selected PHCs seeking to understand their perspectives in relation to the WHO aspects for performance assessment and the PHCPI framework. From the providers' perspectives, the following PHC performance domains emerged: the existence of good teamwork and a team that worked in a unified and coordinated way; the provision of opportunities for growth and development; the presence of job satisfaction among providers; the provision of a safe and secure work environment by the administration; and positive community relationships as a result of interactions that are positively reinforced. These domains not only signal whether a PHC is performing well or not, but also form a 'missing link' connecting demands from external and internal customers to improve delivery of care and hence the health of the population. These domains will, when translated to quantifiable indicators and included in the WHO aspects and PHCPI performance assessment framework, lead to a more holistic and practical tool for PHC assessment that would be more relevant to the Indian setting.

## METHODOLOGICAL STRENGTHS AND WEAKNESSES

The strength of the study lies in the sample that included all the providers in a mixture of PHCs that were performing well, regularly and badly according to the institutional performance measurement, that is, delivery. Theoretically, the study includes a wide array of providers, integrating factors on personal diversity that affect performance, thereby addressing the diverse and unique factors that may be present in each PHC setting. Including one PHC from each of the three selected categories in the study could have limitations in terms of generalisation of findings for the health system.

## RECOMMENDATIONS FOR RESEARCH AND PRACTICE

Further research should be conducted in large number of PHCs to generalise the findings of this study to PHCs in rural areas, in other states, and other LMICs. Research on relationship between different performance domains, quantifiable indicators and criteria from the perspective of multiple stakeholders is also indicated. Given that the domains identified from the providers' perspective were related to the staff's work and life quality and their engagement, further research is needed to establish the interrelations.

## ACKNOWLEDGEMENTS

The authors thank the healthcare providers who responded in the study and provided insight that contributed to the culmination of this research. The authors also thank Nuffic, the Dutch organisation for internationalisation in education for the financial support provided (Grant no. CF11830).

## CONFLICT OF INTEREST

The authors declare that there are no conflict of interests.

## ETHICS STATEMENT

In line with research ethics principles, this study was conducted after receiving clearance from the Ethics Review Committee of Manipal University, Manipal, India. Participants' written informed consent were obtained before each interview, thus ensuring voluntary participation, confidentiality, and the freedom of participants to exit the study at any point in time. The consent form that was used for the study also included the details about the researchers as well as the objectives of the study.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ORCID

Rajeshwari Bangalore Sathyananda  <https://orcid.org/0000-0002-0710-9469>

## REFERENCES

1. Bhore Committee. 1946. [https://www.nhp.gov.in/bhore-committee-1946\\_pg](https://www.nhp.gov.in/bhore-committee-1946_pg). Accessed December 1, 2018.
2. [https://nrhm-mis.nic.in/hmisreports/frmstandard\\_reports.aspx](https://nrhm-mis.nic.in/hmisreports/frmstandard_reports.aspx). Accessed January 10, 2019.
3. UN Press release. Maternal death ratio has fallen 44 percent since 1990-UN. 2015. <https://www.unfpa.org/press/maternal-death-ratio-has-fallen-44-cent-1990-%E2%80%93-un>. Accessed October 7, 2016.
4. The Global Strategy for Women's Children's and Adolescent's Health 2016-2030: Survive, Thrive, Transform. 2015. <http://www.who.int/life-course/partners/global-strategy/globalstrategyreport2016-2030-lowres.pdf?ua=1>. Accessed October 7, 2016.
5. Donnay F. Maternal survival in developing countries: what has been done, what can be achieved in the next decade. *Int J Gynecol Obstet.* 2000;70:89-97.
6. Urban Health Report. 2016. <http://apps.who.int/iris/handle/10665/204715>. Accessed October 7, 2016.
7. Global Status Report on Non-Communicable Diseases. 2014. [https://apps.who.int/iris/bitstream/10665/148114/1/978941564854\\_eng.pdf?ua=1](https://apps.who.int/iris/bitstream/10665/148114/1/978941564854_eng.pdf?ua=1). Accessed October 7, 2016.
8. The Sustainable Development Goals. 2016. <https://www.un.org/sustainabledevelopment/developmentagenda/2016>. Accessed January 4, 2016.
9. Indian Public Health Standards: Guidelines for Primary Health Centres. Revised Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India; 2012. <http://nhm.gov.in/nhm/nrhm/guidelines/indian-public-health-standards.html>. Accessed January 19, 2018.
10. Sathyananda RB, de Rijk A, Manjunath U, Krumeich A, van Schayck CP. Primary health centers performance assessment measures in developing countries: review of the empirical literature. *BMC Health Serv Res.* 2018;18:627. doi.org/https://doi.org/10.1186/s12913-018-3423-0
11. The World Health Report. Health Systems: Improving Performance; 2000. <https://www.who.int/en>. Accessed November 1, 2014.
12. Health Systems Performance Assessment: Debates, Methods and Empiricism. WHO Publication. 2003. [http://www.who.int/health\\_financing/documents/cov-hspa/en/](http://www.who.int/health_financing/documents/cov-hspa/en/). Accessed September 10, 2015.
13. Veillard J, Cowling K, Bitton A, et al. Better measurement for performance improvement in low- and middle-income countries: the primary health care performance initiative (PHCPI) experience of conceptual framework development and indicator selection. *Milbank Q.* 2017;95(4):836-883.
14. Guetterman TC, Fetters MD, Creswell JW. Integrating quantitative and qualitative results in health science mixed methods research through joint displays. *Ann Fam Med.* 2015;13(6):554-561. <https://doi.org/10.1370/afm.1865>

15. Guba EG, Lincol YS. Fourth Generation Evaluation; 1989, 21-49, Sage Publication.
16. Castleberry A, Nolen A. Thematic analysis of qualitative research data: is it as easy as it sounds? *Curr Pharm Teach Learn*. 2018;10(6):807-815. <https://doi.org/10.1016/j.cptl.2018.03.019>
17. Chao M-C, Jou R-C, Liao C-C, Kuo C-W. Workplace stress, job satisfaction, job performance, and turnover intention of health care workers in rural Taiwan. *Asia Pac J Public Health*. 2015;27(2):NP1827-NP1836. <https://doi.org/10.1177/1010539513506604>
18. Sokhanvar M, Kakemam E, Chegini Z, Sarbakhsh P. Hospital nurses job security and turnover intention and factors contributing to their turnover intention: a cross-sectional study. *Nurs Midwifery Stud*. 2018;7:133-140. [https://doi.org/10.4103/nms\\_2\\_17](https://doi.org/10.4103/nms_2_17)
19. Wan Q, Li Z, Zhou W, Shang S. Effects of work environment and job characteristics on the turnover intention of experienced nurses: the mediating role of work engagement. *J Adv Nurs*. 2018;74:1332-1341. <https://doi.org/10.1111/jan.13528>
20. Almalki MJ, FitzGerald G, Clark M. The relationship between quality of work life and turnover intention of primary health care nurses in Saudi Arabia. *BMC Health Serv Res*. 2012;12:314.
21. Clarke RL. Invest in Employee Development. *Healthc Financ Manage*. 2002;56(11):16.
22. Pindus N, Tilly J, Weinstein S. Skill Shortages and Mismatches in Nursing Related Health Care Employment. <http://webarchive.urban.org/publications/410485.html>. Accessed November 3, 2019.
23. Cvengros JA, Christensen AJ, Hillis SL, Rosenthal GE. Patient and physician attitudes in the health care context: attitudinal symmetry predicts patient satisfaction and adherence. *Ann Behav Med*. 2007;33(3):262-268.
24. Chaston I. Internal customer management and service gaps within the National Health Service. *Int J Nurs Stud*. 1994;31(4):380-390.
25. O'Neill M. Employee care, a vital antecedent to customer care in the health care industry an exploratory investigation of the employee satisfaction construct at North East Alabama Regional Medical Center. *Int J Health Care Qual Assur*. 2005;18(2):131-151. <https://doi.org/10.1108/09526860510588160>
26. Manolitzas P, Fortsas V, Grigoroudis E, Matsatsinis N. Internal customer satisfaction in health-care organizations: a multicriteria analysis approach. *Int J Public Adm*. 2014;37:646-654. <https://doi.org/10.1080/01900692.2014.903267>
27. Agyepong IA, Anafi P, Asiamah E, Ansah EK, Ashon DA, Narh-Dometey C. Health worker (internal customer) satisfaction and motivation in the public sector in Ghana. *Int J Health Plann Manage*. 2004;19:319-336.
28. Szecsenyi J, Goetz K, Campbell S, Broge B, Reuschenbach B, Wensing M. Is the job satisfaction of primary care team members associated with patient satisfaction? *BMJ Qual Saf*. 2011;20:508-514.
29. Prytherc H, Kakoko DCV, Leshabri MT, Sauerborn R, Marx M. Maternal and newborn healthcare providers in rural Tanzania: in-dept interviews exploring influences on motivation, performance and job satisfaction. *Rural Remote Health*. 2012;12:2072.
30. Taris TW, Schaufeli WB. Individual Well-Being and Performance at Work: A Conceptual and Theoretical Overview; 2015. <https://www.wilmarschaufeli.nl/publications/Schaufeli/434.pdf>. Accessed December 9, 2019.
31. Bhandari P, Bagga R, Nandan D. Levels of job satisfaction among healthcare providers in CGHS dispensaries. *J Health Manag*. 2010;12(4):403-422.
32. Mishra S. Violence against doctors: the class wars. *Indian Heart J*. 2015;67:289-292.
33. Çelik SŞ, Çelik Y, Ağırbaş İ, Uğurluoğlu Ö. Verbal and physical abuse against nurses in Turkey. *Int Nurs Rev*. 2007;54(4):359-366. <https://doi.org/10.1111/j.1466-7657.2007.00548.x>
34. Joa TS, Morken T. Violence towards personnel in out-of-hours primary care: a cross-sectional study. *Scand J Prim Health Care*. 2012;30:55-60. <https://doi.org/10.3109/02813432.2012.651570>
35. Hobbs FDR, Keane UM. Aggression against doctors: a review. *J R Soc Med*. 1996;89:69-72.
36. Ahmed F, Khizar Memon M, Memon S. Violence against doctors, a serious concern for healthcare organizations to ponder about. *Ann Med Surg*. 2018;25:3-5.
37. Philips JP. Workplace violence against health care workers in United States. *N Engl J Med*. 2016;374:1661-1669.
38. Singh M. Communication as a bridge to build a sound doctor-patient/parent relationship. *Indian J Pediatr*. 2016;83(1):33-37.
39. Tucker JD, Cheng Y, Wong B, et al. Patient-physician mistrust and violence against physicians in Guangdong Province, China: a qualitative study. *BMJ Open*. 2015;5:e008221. <https://doi.org/10.1136/bmjopen-2015-008221>
40. Reddy IR, Ukrani J, Indla V, Ukrani V. Violence against doctors: a viral epidemic? *Indian J Psychiatry*. 2019;61(10):782-785.

41. Chandra S, Ward P, Mohammadnezhad M. Factors associated with patient satisfaction in outpatient department of suva sub-divisional health center, Fiji, 2018: a mixed method study. *Front Public Health*. 2019;7:183. <https://doi.org/10.3389/fpubh.2019.00183>
42. Rao GN. How can we improve patient care? *J Community Eye Health*. 2002;15(41):1-16.
43. Kennedy DM. Creating an excellent patient experience through service education. *J Patient Exp*. 2017;4(4):156-161. <https://doi.org/10.1177/2374373517718351>
44. Uneo E, Adegoke AA, Masenga G, Fimbo J, Msuya SE. Skilled birth attendants in Tanzania: a descriptive study of cadres and emergency obstetric care signal functions performed. *Matern Child Health J*. 2015;19:155-169.
45. Shapiro I. Doctor means teacher. *Acad Med*. 2001;76(7):711.
46. O'Sullivan H, Mckimm J. Doctor as professional and doctor as leader: same attributes, attitudes and Values? *Br J Hosp Med*. 2011;72(8):463-466.
47. Bastos C. Doctors for the empire: the medical school of Goa and its narratives. *Identities*. 2001;8(4):517-548. <https://doi.org/10.1080/1070289X.2001.9962707>
48. Makolkin A. The physician as a deity: balzac's meandering between religion and medicine in the country doctor. *Ultim Real Mean*. 2006;29(1-2):5-16.
49. Sharma DC. India still struggles with rural doctor shortages. *Lancet*. 2015;386:2381-2382.

**How to cite this article:** Bangalore Sathyananda R, Krumeich A, Manjunath U, de Rijk A, van Schayck CP. Providers' perspectives on the performance of primary healthcare centres in India: the missing link. *Int J Health Plann Mgmt*. 2021;36(5):1533-1552. doi:10.1002/hpm.3176