NARRATIVE REVIEW

Causes and consequences of the shortage of physicians in Sindh, Pakistan: a local perspective

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Abstract

The narrative review was designed to investigate potential factors that contribute to the shortage of primary care and specialty care physician workforce in Sindh, Pakistan, and how the disparity contributes to the proliferation of medical quackery across the province. There are serious consequences for the patients, putting additional strain on Sindh's healthcare system. Pakistan is one of the many countries where the demand for doctors is outpacing the supply. The province of Sindh lacks the medical personnel necessary to address its healthcare needs. Since there is a greater need than supply of general practitioners and specialists, there may be a growing gap between the healthcare workforce and patient care which may reinforce mounting physician shortage in the future due to factors, such as an ageing physician population, an escalating general population, and the fact that many doctors are nearing retirement age.

Keywords: Physicians shortage, Causes, Implications, Quackery, Sindh.

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Introduction

The widening gap between healthcare workforce and patient care has turned into a global issue,[1] and Pakistan is one of many countries suffering on this count[2]. The Pakistan Medical Commission (PMC) registered 249,371 physicians, including specialists, and 128,744 nurses, including lady health visitors (LHVs), community-based midwives (CMWs), midwives (MWs) and family welfare workers (FWWs), to serve the country's population of over 232 million people, according to the 2021 Universal Health Coverage-Monitoring Report-Pakistan[3]. As a result, the doctor-to-population ratio in Pakistan was 1.09/1000, while the nurse-to-population ratio was 0.59/1,000. The province of Sindh had 83,943 registered physicians, including specialists, and 29,637 nurses, including nurses, LHVs and CMWs, to serve 52.2 million people. In Pakistan, there were 117 registered medical institutions (45 public and 72 private) with a production capacity of 15,733 medical graduates each year. In Sindh, 29 medical institutions with a total capacity of 3,950 medical graduates per year are registered.[3]

In Pakistan, there are two routes to becoming an authorised specialist doctor. One way entails being a postgraduate trainee (PG) of the Fellow of College of Physicians and Surgeons (FCPS), which is a residency training under the supervision of clinical faculty. The other way comprised Master of Surgery (MS) or Doctor of Medicine (MD) qualifications which are university-based post-graduation programmes. A number of medical colleges and universities believe that the FCPS system is founded on the monopoly of the College of Physicians and Surgeons of Pakistan (CPSP), and they wish to counteract this by establishing an alternative system for generating subject specialists. In both the public and private sectors, there are fewer seats available for FCPS part II training. Induction is held twice a year, while the FCPS part I exam is held four times a year by the CPSP. The FCPS-II exam has a low pass rate due to a very 'subjective' assessment system, which leaves students frustrated. This has an impact on recent graduates who are looking for a faster approach to becoming specialists. The number of post-graduate training institutions authorised by the CPSP should be raised, as should the number of slots available for FCPS-II trainees. The annual number of FCPS–I exams should be lowered. As a result, the majority of students who have already passed the exam will receive training prior to their next attempt before their FCPS-I exam 3-year validity expires. The majority of hospitals in Sindh's rural areas lack senior consultants, requiring patients seeking specialist treatment to travel to Karachi, which has 77% of the province's post-graduate medical education training institutions. In this situation, young doctors have no choice, but to come to Karachi for training.

It's just as vital to teach students the value of good conduct and a positive attitude as it is to teach them how

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to achieve professional excellence. A recent study showed that patients desire soft-spoken doctors who listen to them and examine them thoroughly.[4]

Pakistan is one of many countries where the demand for doctors is outpacing the supply. The provinces lacks the medical personnel necessary to address its healthcare needs. The current narrative review was planned to explore the causes for Pakistan's physician shortages and how this has negatively affected patient experience, with a focus on the severity of quackery practices that have a long track record in Sindh.

There have been numerous reports on the physician workforce shortage in Pakistan, but information about its causes is dispersed in literature with various perspectives. To date, no comprehensive study has been published that explains the myriad factors that contribute to the physician shortage in the country, and its numerous detrimental effects on patient experiences, including extensive waiting time before consultation, patient's dissatisfaction due to low doctor-patient interaction, shortage of specialist doctors in rural Sindh, aggravated quackery practices, and the lack of healthcare facilities in rural Sindh and urban slums. The current narrative review was planned to investigate potential factors that contribute to the shortage of primary care and specialty care physician workforce in Sindh, and how the disparity contributes to the proliferation of medical quackery across the province.

Materials and Methods

The narrative review was conducted at the Sindh Healthcare Commission (SHCC) from March 17 to July 18, 2022, using a mixed-methods, convergent qualitative synthesis design. It involved a qualitative literature review of original articles and grey literature published in English language from 2017 onwards to explore the reasons behind the physician shortage. A search was conducted on Google, Google Scholar, PubMed and Medline search engines. Articles published in any language other than English, and those in which methodology was not addressed were excluded. This was followed by an observational-qualitative approach using non-probability sampling technique to assess the effects of physician shortage on patient care. A quackery-regulatory-intervention induced questionnaire was used to spot a quack (unqualified healthcare practitioner) and to collect data regarding the certification of practitioners regardless of age, gender, caste or religion. Findings were generated using deductive and inductive approaches of extracting themes from the data. The data collected during regulatory actions and observations have been made public in accordance with Section 38 of the SHCC Regulations-2017.[5]

Based on anti-quackery campaigns in 29 Sindh districts, the sample size was calculated. After physically visiting 1,000 medical facilities and interacting with other anti-quackery team members operating across the province, and empirically low doctor-patient ratio and its effect on patient care was assessed along with the manner in which quacks are thriving. Those included were qualified physicians working in general outpatient departments (OPDs), as well as OPDs related to gynaecology, ear-nose-throat (ENT) and Paediatrics as well as consultant clinics. Also included were non-qualified medical practitioners, quacks, running dental clinics, maternity homes, general clinics, gynaecological, ENT, eye-care facilitities, diagnostic centres/laboratories, homoeopathic clinics, and other consultant clinics. Government hospitals/ dispensaries/vaccination centres, physiotherapy clinics, blood banks, as well as psychiatric hospitals and tertiary care facilities were excluded.

Of the 1,000 healthcare facilities (HCFs) visited, 95(9.5%) did not meet the inclusion criterion as they were the traditional 'Tibb' clinics.

Results

Of the 1,000 healthcare facilities (HCFs) visited, 95(9.5%) did not meet the inclusion criterion as they were the traditional 'Tibb' clinics. Data related to 905(90.5%) HCFs was analysed.

When searching for "physician workforce shortage", Google Scholar reportedly turned up 93,800 studies.[6] According to a recent study, Pakistan would experience a shortfall of 93,029 physicians by 2030, whereas Sindh will experience a shortage of 57,999 physicians.[2] The following factors may have caused the shortage of professionals in primary care, surgical and other medical specialties:

Doctor's preferences to work abroad

To date, the reality of physician shortage has remained a major source of concern for health professionals and society all over the world. Developed countries recruit overseas medical graduates to satisfy their demands, but developing countries, due to limited resources, either have no strategy or have utterly failed to solve the problem.[1] In Pakistan, physicians go abroad for a variety of reasons, including poor service structure, increased workload, low job satisfaction, longer working hours (about 80 hours per week during residency), and doctor harassment.[7-9] According to a 2018 report on violence and aggression against doctors in Pakistan, the majority

(85%) of medical professionals have experienced mild incidents, 62% have experienced moderate incidents, and approximately 38% of primary care physicians have experienced severe violence. The research also noted that some doctors had more than one instance of aggression, bringing the overall percentage above 100%. The most typical form of mistreatment experienced by physicians from patients or their attendants is verbal abuse.[10] The availability of exceptional career development opportunities abroad, which are necessary to achieve professional excellence in a cutthroat market, as well as the financial advantages of working abroad, which are hard for doctors to turn down, could be further reasons for physician migration.[11] Another possible explanation is the comparatively low acceptance rate for PG or resident training in Pakistani medical schools. Every year, Pakistan produces around 14,000 physicians, with 900-1,275 of them immigrating to other countries.[12] More than 40,000 physicians worked overseas till March 2019, according to data published by the Ministry of Overseas Pakistanis and Human Resources Development in February 2020.[13]

Female domesticity

After graduating from medical school, domesticity among female doctors is one of the major factors contributing to the physician shortage. About 80-85% of students in Pakistan's medical schools are female, but, according to the Pakistan Medical and Dental Council (PMDC)[14], only 44% of women are registered as medical practitioners, which means that approximately 50% of the female workforce leaves the field and does not have a licence to practise medicine to serve the general public.[15] Since female doctors rarely work without their families' permission, especially their in-laws, after getting married. It has been reported that Pakistani parents encourage their children, particularly women, to pursue medical school graduation in order to gain social position, honour and prestige, as well as to become more marriage-worthy in society.[16-17] Due to cultural hurdles as well as family and social compulsions, the majority of female doctors do not continue their medical practice after marriage. Other factors include the working attitude of female doctors, who do not want to work in rural areas, leading to a shortage of female doctors, and, as a result, a gender gap in medical practices.

Gender-based preferences

There is evidence of gender differences in surgery worldwide. A recent survey sought to determine the percentage of Pakistani women who considered a career in surgery before enrolling in medical school, and revealed that the majority of female pre-med students had already opted against pursuing a surgical profession before even enrolling in medical school. The main deterrents were a lack of interest in surgery, the difficulty and length of surgical education, training and practice, role models and the potential for violent patient behaviour.[18] However, the departure of female physicians has expanded the divide between female doctors and female patients in medical practices.[12] Another factor for female doctors leaving the profession is gender bias, as most female doctors do not want to handle male patients and refuse to perform night shifts.[19]

All surgical subspecialties in Pakistan, with the exception of cardiothoracic surgery and neurosurgery, show a relatively substantial preference for gender concordance.[20] In medico-legal cases, gender preferences are also evident, particularly when females are the subjects of investigation. The percentage of female medico-legal specialists is alarmingly low, particularly when it comes to performing medico-legal (autopsy) examinations on females in Karachi, where there are only five female medico-legal officers (F-MLO) to service the city's 7.5 million female residents. Male MLOs are unable to provide services at designated hospitals because of limitations imposed by the Supreme Court of Pakistan, despite an increase in medico-legal cases involving women.[21] These gender discrepancies could increase the number of surgical diseases and harm women's surgical prospects nationwide.

Workforce shortage in rural areas

The majority of Pakistanis — about 61% — live in rural areas. In Pakistan, the health system is overburdened due to rapid population growth and uneven distribution of doctors, which contributes to the chronic shortage of physicians in rural and peri-urban areas. Only those who can travel will be treated by a doctor because there are not enough doctors there.[22] There is not a single health facility in rural Sindh that offers PG training in emergency medicine or critical care, forcing doctors from across the province to travel to Karachi for training in these specialisations.[23] Physicians in Sindh prefer to practise and further their careers in large cities rather than rural areas, resulting in a severe physician shortage in rural areas, leaving rural and small-town areas at the mercy of quacks, and creating a lucrative market for quacks and traditional medicine practitioners.

Alternative jobs

Another aspect contributing to the physician shortage is non-clinical employment in sectors like regulatory agencies, pharmaceuticals, public health insurance firms,

public health education, consultancy, medical malpractice experts, and hospital management by doctors to avoid the inconveniences of traditional healthcare, working extra hours, and dissatisfaction with work-life balance. An increased workload of paperwork and administrative activities, such as heavy use of the electronic medical record and typing notes into it while providing care to the patients may also lead to physician burnout.[24-25] As a result, they desire work-life balance, flexibility and employment churn.

The overall situation regarding low doctor-patient ratio has a negative impact on patient care. These effects include:

Patient dissatisfaction with medical services

Physician burnout diverts physicians' attention and time away from clinical activities. The frustrating rush at OPDs leads to time limits on physician-patient contacts, compromising quality of care and leaving patients dissatisfied, especially when a doctor speaks ambiguously, avoids making eye contact with the patient during a consultation, and concentrates primarily on prescribing medication rather than also conveying the significance or consequences of the diagnosis. On the other hand, quacks are soft-spoken, spend more time listening to their patients, and unreservedly prescribe antibiotics and give their patients painkiller injections and infusions to provide them quick comfort. As a result, the general populace in Sindh consults quacks due to simple or compounded ignorance.

Prolonged waiting time

During pregnancy and birthing complications, the majority of Muslim women prefer to consult with female gynaecologists, nurses and midwives rather than male gynaecologists. In Pakistan, about 95% of women prefer to consult a female gynaecologist. [26] However, due to the poor ratio of female gynaecologists (F-GYN) to female patients, the healthcare employees at HCFs are constantly frustrated by the rush at gynaecology OPDs. Every day, F-GYNs have to examine multiple patients who are dissatisfied by excessive waiting periods. Patients' demands on doctors, as well as excessive waiting times for patients, can be stressful for both patients and doctors.

According to a research published in 2019, Sindh's provincial capital has three F-MLOs to deal with the province's population of over 7.6 million women. Female victims and their attendants may have to wait several days at Karachi's large public-sector hospitals due to a paucity of F-MLOs.[21]

According to the National Academy of Medicine (previously known as The Institute of Medicine), 90% patients should be evaluated by clinicians within 30 minutes of their planned appointment time. [27]

Implications of low consultant workforce

Patients in Sindh tend to visit OPDs more frequently than specialist clinics, therefore they miss out on learning about specialist-care consulting fees. They frequently rely on general practitioners (GPs) for all forms of care, with the same consultation fee. Specialist doctors, on the other hand, demand higher fee than GPs. There is a severe scarcity of vascular surgeons in Karachi's major public hospitals. Patients who require vascular surgery are, therefore, directed to private facilities. Patients from lower socioeconomic strata of society, who cannot pay the costs of such surgeries, either die or become crippled.[28] According to the Pakistani Endocrine Society, there is one endocrinologist (diabetes specialist) for every 0.2 million diabetic patients. As a result, many individuals in Sindh seek medical help when they develop advanced diabetes issues. [29]

Patients are forced to visit non-registered practitioners

The relative scarcity of primary care physicians in Sindh's rural districts has created a lucrative market for unregistered healthcare providers. Finding a skilled physician late at night and throughout the late evening hours is difficult.[30] As a result, in times of crisis, rural patients are compelled to see anyone who is available. The majority of nurses, LHVs, MWs, health technicians, and dispensers in rural Sindh are practising medicine and running clinics/dispensaries/health centres on their own rather than assisting a qualified medical practitioner. The PMDC Ordinance, 1962, and the Drugs Act, 1976, expressly prohibit this. Health technicians and dispensers rely on Sindh Medical Faculty (SMF) certification, which expressly states, "This credential does not authorise the holder to practice Western Medicine." Allopathy is practised by electro-homeopaths and homoeopaths alike. Traditional healers and unregistered 'Unani' medical practitioners are hawking nostrums that have not been demonstrated to work. The Sindh Nursing Examination Body, which is an examination board under section 11 of the Pakistan Nursing Council (PNC) Act, 1973, issues diploma certificates to nurses, MWs and LHVs in Sindh. In order to perform healthcare services within the scope of the registration, diploma holders should be registered under section 20 of the PNC Act, 1973.

Quacks thrive

Around 40,000 non-qualified dental practitioners are working in Pakistan.[31] In the urban areas, there was only one dental surgeon for every 42,000 people, and the ratio in rural areas was considerably worse, with just one dentist for every 500,000 people, according to a report released in March 2021[31]. According to the World Health Organisation (WHO) recommendations, there should be one dentist for every 20,000 people.[32]

During anti-quackery campaigns, it was observed that Sindh's metropolitan areas had higher concentrations of dental quackery. Dental clinics make up 70-80% of the shuttered quackery outlets in each anti-quackery campaign. Dental technicians and hygienists operate dental clinics without supervision and hire a qualified dentist to perform operations, such as tooth extractions, root canal procedures, fillings, prescribing medications for dental problems, and denture fittings. It has also been discovered that the majority of standard clinical laboratory tests are performed without supervision or agreement with a certified pathologist by non-qualified lab technicians, who do not hold a certificate from SMF. Diagnostic imaging procedures, such as sonograms and radiographs, are carried out without the supervision and/or authentication of sonologists and/or radiologists. Sonographers are supposed to help sonologists and/or gynaecologists by operating imaging equipment, collecting and recording data during ultrasound examinations. Instead, sonographers are running diagnostic centres on their own and signing reports while acting as a qualified physician. Non-radiological technologists have been witnessed operating X-ray labs without supervision or safety precautions, such as classic lead and current lead-free radiation shielding and apron. X-rays can penetrate barriers and induce life-threatening infections if safety precautions are not implemented. The majority of LHVs, nurses and MWs are not PNC-registered and work in independently owned maternity homes/hospitals in Sindh's major cities, dispensing medications without a doctor's prescription. Based on a diploma qualification from the Sindh Nursing Examination Board, they claim to be qualified to run gynaecology OPD services in a hospital setup. Their services may be adequate for providing basic health services to the general public in rural and remote areas of Sindh, where people lack access to primary healthcare.

Homeopaths, on the other hand, are dabbling in allopathic medicine and referring to themselves as "Doctor/Dr". According to the The Sindh Allopathic System (Prevention of Unauthorized Use) Act, 2014, non-registered healthcare practitioners of homoeopathy, allopathy, Unani, Ayurveda, or any other system of medicine, cannot use the prefix “Doctor/Dr” with their names to imply that they are authorised to practise medicine, prescribe antibiotics, or perform surgical operations.

Discussion

Pakistan would experience a physician shortfall of 93,029 by 2030,[2] but it is unclear how many physicians would be needed or produced by 2030 in terms of primary and secondary care physicians, and tertiary healthcare specialists. The physician workforce is the foundation of any nation's healthcare system and economic expansion, but a significant lack of skilled healthcare professionals is one of the fundamental factors preventing further advancement in the health sector. There are many causes for the shortage of physicians in Pakistan, but the major ones include emigration to other countries[12,13], the absence of a sizable number of female doctors[14,15,] female doctors' preferences for particular specialties[18], gender preferences[19], dislike of night shifts[19], and the growing trend of non-clinical jobs among physicians[24]. By identifying the factors that contribute to the shortage, investigating how it affects patient care and safety, and making strategic recommendations to address the healthcare needs, the study's key findings establish a strong correlation between physician workforce shortages and patient care.

The gender imbalance in the physician workforce as a result of female doctors leaving the field has an effect on how patients are treated. In Sindh, LHVs, nurses, and MWs are exploiting the widening gender gap and running maternity homes independently by impersonating doctors, gynaecologists owing to the lack of female doctors and the fact that female patients prefer to consult a female doctor for social and family reasons.

Furthermore, physicians in rural primary care settings do not have appropriate assistance from emergency and sub-specialist physicians. Because they live miles away from healthcare facilities, the majority of rural patients travel longer distances to receive treatment. In many rural locations, hospital services and doctors are only available during the day, and emergency care hospitals are not open late at night.[30]

The current review has limitations as it did not fully capture the national and international physician shortage problem. Despite these limitations, however, the findings provide useful, updated information concerning the negative effects of primary and specialty care shortages in Sindh. On the basis of the findings, the following recommendations are made:

The accountable institutions should estimate the number of female and male physicians in the available workforce, categorised by specialty, who will retire within five years, and then design a strategy to address the anticipated shortfall before it worsens.

The accountable institutions should design and implement policies that include boosting funding for female-faculty development programmes at various private and public medical schools, as well as interventions to promote female specialist training and availability.

The inclusion of women physicians should be increased and online consultations (e-clinics) may well be a way to get non-practising female doctors into the field to prescribe medications and order lab tests.

The government should create a number of e-clinics in underprivileged and remote areas of Sindh to provide virtual consultations that may be of assistance to the poor.

The governing institution should take measures to combat physician burnout that is causing them to look for alternative positions.

To prevent Pakistani doctors from leaving the country after completing their training, the relevant institutions must implement a rational remuneration package. Additionally, changes like "The Working Time Directive" that limit the amount of hours a doctor can work must be implemented in Pakistan.

Female doctors may be persuaded to remain in the profession if legislation that effectively creates a safe and secure work environment for women includes features that will make the law's implementation easier.

The number of medical graduates produced must be enhanced, and governing institutions should gradually extend financial support to medical faculties.

The number of paid seats for PG trainees related to both FCPS and MS/MD programmes should be raised and each district of Sindh should have a medical training institution.

Paucity of staff at district-level hospitals in Sindh should not force health-seekers to go to divisional-level facilities.

The relevant institutions should establish training centres in the fields of intensive care and emergency medicine in various rural areas of Sindh to provide relief to rural patients currently seeking specialised treatment in Karachi.

Conclusion

The physician workforce deficit is acute in rural Sindh due to a variety of reasons Growing population and lack of primary and specialty care physicians, particularly dentists, have created space for quacks who are more readily available than a healthcare professional.

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